• JULY 1956

BUTANE-PROPANE News

A CHILTON PUBLICATION

Year-Round Comfort Conditioning Issue

The Chicago Transit Bus Story

HEADQUARTERS FOR L.P. GAS INFORMATION SINCE 1931

IT'S NOT TOO EARLY!

TO GET READY FOR NEXT FALL'S BUSINESS

THIS SHOULD BE No. 1 ON YOUR CHECK LIST...

ALL TANKS FULL OF WARRENGAS

SALES OFFICES

LOUISVILLE, KENTUCKY
ST. LOUIS, MISSOURI
FT. WORTH, TEXAS
NEW YORK, N. Y.
MADISON, WISCONSIN
JACKSON, MISSISSIPPI
HOUSTON, TEXAS
MIDLAND, TEXAS
OMAHA, NEBRASKA
COLUMBIA, SOUTH CAROLINA
TAMPA, FLORIDA

WARRENGAS the Concentrated fuel

WARREN PETROLEUM CORPORATION
TULSA, OKLAHOMA

SHOULDER-CONNECTED

HACKNEY MODEL S499 (CAPACITY, 499 GALLONS)
Other Hackney Shoulder-Connected Systems: Model S640 (Capacity, 640 gallons), Model S995 (Capacity, 995 gallons), Model S1135 (Capacity, 1135 gallons)

END-CONNECTED

HACKNEY MODEL 37E499 (CAPACITY, 499 GALLONS)
Other Hackney End-Connected Systems: Model E995 (Capacity, 995 gallons), Model 48E1745 (Capacity, 1745 gallons), Model 48E2550 (Capacity, 2550 gallons), Model 48E3360 (Capacity, 3360 gallons)

TOP-CONNECTED

HACKNEY MODEL 30T250 (CAPACITY, 250 GALLONS)
Other Hackney Top-Connected Systems: Model 30T320 (Capacity, 320 gallons), Model T499 (Capacity, 499 gallons), Model T995 (Capacity, 995 gallons)

UNDERGROUND SYSTEMS

HACKNEY MODEL 30U250 (CAPACITY, 250 GALLONS)
Other Hackney Underground Systems: Model 30U320 (Capacity, 320 gallons), Model U499 (Capacity, 499 gallons), Model U995 (Capacity, 955 gallons)

A Hackney system for every need

Whatever you need to meet your customers' requirements for LP-Gas storage—there's a Hackney quality LP-Gas system that fills the bill.

Hackney engineering assures long life...low maintenance cost . . . greater safety . . . well-satisfied customers. Designed and tested to meet all safety regulations of ASME and NBFU. Equipped with first-quality fittings selected for safety and long life. Welding is X-ray controlled to assure sound, uniform welds. Each tank is hydrostatically tested, and a certificate of inspection is issued with every Hackney System—for your security and peace of mind.

After testing, tanks are thoroughly cleaned and dried —are carefully spray painted for protection against the elements. Sturdy, streamlined, seamless hood covers and protects all fittings on the above-ground systems.

Underground systems have compact multivalve unit mounted on heavy-duty riser pipe.

Send now for the new Hackney System Bulletin. Compare Hackney quality with any other system.

Hackney Pressed Steel Tank Company *Manufacturer of Hackney Products*

1487 South 66th Street, Milwaukee 14, Wisconsin

Eastern District Offices:
138 Wallace Ave., Downingtown, Pa.
Union Street, Marshfield, Mass.
52 Vanderbilt Ave., Room 2099, New York 17

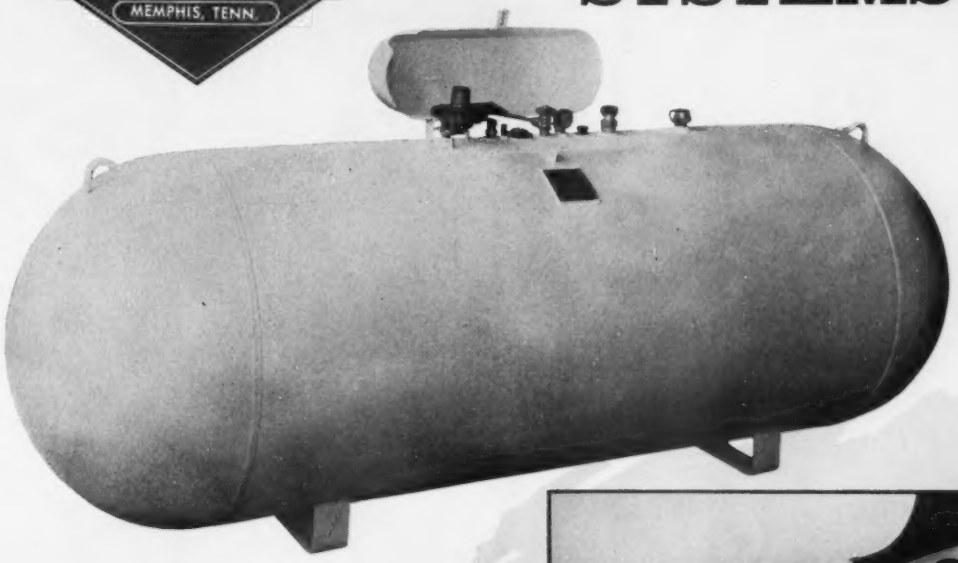
Southern District Offices:
936 W. Peachtree St., N.W., Rm. 112, Atlanta 3
601 Kerneywood Drive, Lakeland, Fla.

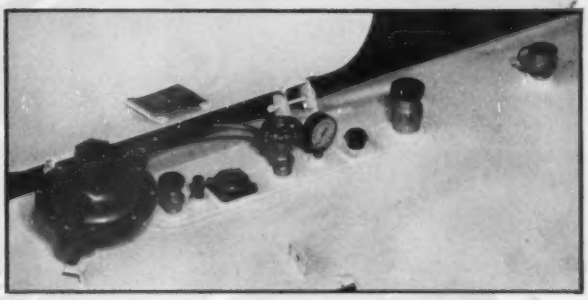
Midwestern and Western District Offices:
208 S. La Salle St., Rm. 790, Chicago 4
4247 North Avenue, No. 4, Cincinnati 36, Ohio
227 Hanna Bldg., Cleveland 15, Ohio
14610 Rosemont Road, Detroit 23, Mich.
4550 Main St., Room 204, Kansas City 6, Mo.
552 Roosevelt Bldg., Los Angeles 17
57 E. Wentworth Ct., Minneapolis 19, Minn.

LP-GAS CONTAINERS FROM ONE POUND TO 30,000 GALLONS

MADE BY
FLINT
STEEL CORPORATION
MEMPHIS, TENN.

BUTANE-PROPANE SYSTEMS





ONE SMALL TANK or a complete BULK PLANT INSTALLATION.

The modern manufacturing facilities of Flint's plants at Memphis and Tulsa can be your assurance of a source of supply when you need it. These facilities enable Flint to fabricate, utilizing production line techniques, pressure vessels of any size.

Flint's facilities are so complete that all components are designed, fabricated and finished in one shop. Fittings only are not built by Flint, but they are the finest made and are laid-out in Flint's unique "island-bar" installation.

Ask about Flint Installation Services on Bulk Plants.

SPECIFICATIONS

DOMESTIC TANKS

Capacity	Dia.	Length
250	30"	92"
500	37"	120"
1000	41"	193"

BULK STORAGE TANKS

Capacity	Dia.	Length
6000	60"	43'0"
7145	60"	51'0"
8000	72"	39'7"
10000	72"	49'0"
12000	72"	58'1"
12000	106"	29'2"
18000	106"	42'2"
30000	106"	68'4"

ANCO
MANUFACTURING & SUPPLY CO.

Flint LPG systems are also sold through Anco Manufacturing & Supply Co. at East St. Louis, Des Moines and Tulsa

FLINT STEEL CORP.

TULSA
LUther 4-1441

MEMPHIS
WHitehall 2-2432

Confidence...

Like the airline pilot who places complete confidence in an airport beacon to help guide him . . . you can place complete confidence in Beacon Petroleum to guide you through your busiest season. The finest quality Butane-Propane, delivered where needed, when needed has made Beacon a leader in the LPG field. Beacon Petroleum has the facilities to help *your* business grow . . . why not investigate?

BEACONGAS

OFFERS YOU . . .

- **the Finest LP Gas**
  NGAA Butane-Propane
- **Ample Storage**
  to meet your every need
- **Dependable Production**
  to meet seasonal demands
- **Prompt Shipment**
  Tank car fleet assures delivery

BEACONGAS

BEACON

PETROLEUM COMPANY

TULSA • HOUSTON

BPN

A CHILTON PUBLICATION

EDITORIAL

CARL ABELL, Editor
Lynn C. Denny, Associate Editor
Martin A. Brower, Associate Editor
Robert J. Sipchen, Field Editor
Lester L. Luxon, Technical Editor
Raymond A. Grote, Art Editor
Mary Lou Harrington, Editorial-Production

BUSINESS

Robert E. McKenna, Publisher
Gilbert Bowman, Promotion Manager
Gene Masters, Research
Roberta Conaway, Advertising-Production
Bert Hill, Circulation Manager

ADVERTISING OFFICES

New York (17) 527 Lexington, Room 314
Peter Wile, PLaza 3-1838

Chicago (1) 333 No. Michigan Ave.
Wm. O. Dannhausen, FRanklin 2-4615

Cleveland (3) 4500 Euclid Ave.
Frank J. Enright, Richard L. DeMuesy
HEnderson 1-1012

Tulsa — 420 So. Boulder
Craig Espy, Petroleum Bldg.
LUther 4-1769 - RI 2-0807

Los Angeles (57) 198 So. Alvarado St.
Joseph R. Geryk, DUnkirk 7-4337

•

BUTANE-PROPANE News is published monthly. Copyright 1956 by Chilton Co. (Inc.) at 198 So. Alvarado St., Los Angeles 57, Calif. Subscription price: United States, U. S. possessions and Canada: 50c per copy; one year, $2; two years, $3. Mexico, South and Central America, Caribbean area: one year, $3; two years, $5. All other countries, $10 per year. Entered as second-class matter May 29, 1939, at the post office at Los Angeles, Calif., under the Act of March 8, 1879. Member of Liquefied Petroleum Gas Association, National Fire Protection Association.

•

JOS. C. HILDRETH, Board Chairman
G. C. BUZBY, President

Vice Presidents: P. M. Fahrendorf, Harry V. Duffy. Treasurer, William H. Vallar; Secretary, John Blair Moffett; Directors: George T. Hook, Maurice E. Cox, Frank P. Tighe, Leonard V. Rowlands, Robert E. McKenna, Irving E. Hand, Everett B. Terhune Jr., Russell W. Case Jr., Jack C. Hildreth.

•

Editorial and advertising offices:
198 So. Alvarado St., Los Angeles 57
Phone DUnkirk 7-4337

BPA NBP MPA

JULY 1956

BUTANE-PROPANE News

Volume 18—Number 7

CONTENTS

YEAR-ROUND COMFORT SECTION

Year-round comfort conditioning: a rewarding challenge for dealers 27

The ABC's of residential air conditioning 28
By Martin A. Brower

All-year air conditioning — It may cost more to live without it 32

Gas air conditioning strides ahead 35
By Clifford E. Hall

Safe heating installations: apply rules locally throughout each day 40
By Robert J. Sipchen

Financing the customer 45
By Martin A. Brower

Small commercial air conditioning: a dealer's opportunity 51
By George Kelley

Degree-day counter saves the day 58
By Lyman Adams

Animals want comfort, too 63

Pete outfits a grizzly bear with a new set of teeth — Episode No. 11 69
By J. Arthur Thompson

Switching from natural gas to propane insures protection of ceramics plant 71
By Gene Creighton

POWER

World's largest LPG bus fleet — Low cost, top performance, no fumes 136

Railroad cabooses are going modern 148

DEPARTMENTS

Advertisers Index 150
Associations 76
Beyond the Mains 21
Calendar 74
Classified 132
Letters 11
News 106
Power 135
The Trade 90
Washington Report 72

What's New in Products and Trade Literature 78

'One-Stop' shopping!

the smart new way to buy all your L-P products

Purchasing your L-P appliances the Perfection "one stop" way gives you advantages you never had before. Just to name a few...

You can order virtually every product you need from ONE source of supply. Perfection does have the most complete line of equipment for the L-P gas distributor or dealer.

You get *only* ONE billing. Think of the problems this solves in your bookkeeping. You have the advantages of bigger and better discounts because you are buying in quantity from *one* source.

You get the benefit of Perfection's dating plan, the best in the business . . . and delivery dates that are firm.

You can use Perfection's co-ordinated promotion plan and programs to help you sell a full line of L-P products.

"One Stop" Shopping at Perfection is a case where putting all your eggs in one basket pays off.

"One Stop" Shopping puts you in the enviable position of being able to carry one or *all* of these top-quality Perfection L-P products!

1. Perfection completely **AUTOMATIC GAS WATER HEATERS,** galvanized or glass line tanks, are "front runners" with customers. All models guaranteed.

2. Budget-Priced Beauties in **UNVENTED GAS HEATERS.** Make great "leaders". Pack a lot of comfort in a little space. *Lifetime burner guarantee.* Sizes from 16,000 to 30,000 B.t.u.

3. Compact, completely automatic **"BIG BOY" COUNTERFLOW HEATER,** 100,000 B.t.u. input, provides clean comfort wherever large-area heating is required. Easy to install, no complicated duct system required.

4. Deluxe High Broiler **40" GAS RANGE** features thermostat-controlled top burner that will not burn foods, serves as a griddle and, with cover, a work area. Also available are Certified Performance 30" and 36" models.

5. Sensationally styled, **radiant-vented GAS HEATERS** carry a lifetime written burner guarantee and a 20-year combustion chamber guarantee. Available in 20,000, 30,000, 45,000 and 65,000 B.t.u.'s . . . all profitably priced.

6. **AUTOMATIC CENTRAL HEATING.** Perfection offers the furnace with the only real exclusive in the heating business, Regulaire. No cold, drafty floors . . . no hot or cold blasts of air.

7. **SUMMER COOLING.** Perfection air conditioning costs less to install because of exclusive Perfection method. Provides more cooling per kilowatt than other brands.

8. Hottest sales item in the gas heater field! Perfection's new **"COOL CABINET" HEATER** . . . in a gorgeous choice of gay "confetti" decorator colors. Vented or unvented 20,000, 30,000 or 45,000 B.t.u. *Lifetime burner guarantee!*

9. Perfection's Schwank Patented L-P **"INFRA-RED" units** lend themselves to hundreds of successful applications . . . indoors or outdoors.

Buying Perfection's "One Stop" way builds "Non-Stop" profits for you. Write Perfection Industries, Division of Hupp Corporation, 7704-B Platt Avenue, Cleveland, Ohio.

68 years of fine products

Perfection®

THE MOST COMPLETE L-P LINE FROM ONE SOURCE

LP TRAC-TOR CUSTOM-BILT TANKS

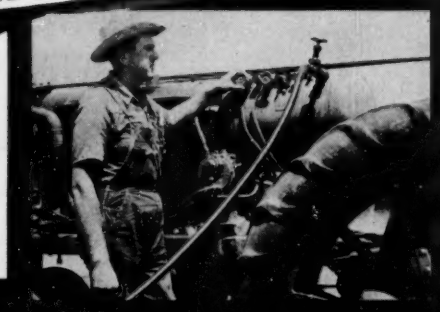
Make and Model	Water Capacity	Size	List Price
ALLIS CHALMERS			
DC-WD-WC & WD45	22	18 x 27	$114.87
B	15	18 x 18	109.10
CASE			
D & DC	22	20 x 20	109.62
L-LA-LAI (Standard)	31	20 x 29	122.34
L-LA-LAI (Special)	42	24 x 29	136.64
SC	20	16 x 28	106.84
VAC	13	14 x 23	103.90
JOHN DEERE			
A*	30	18 x 35	132.64
B*	22	16 x 32	126.53
D	46	20 x 38	131.52
G*	34	18 x 40	129.58
40	25	18 x 30	123.61
50*	28	16 x 42	129.58
60*	34	18 x 40	132.51
70	41	18 x 44	134.25
MTI	13	12 x 29	100.99
FORD			
800 & 600 (place of gas tank)	18	15 x 31	117.42
Rear Mount	24	16 x 32	109.62
Jubilee (place of gas tank)	18	15 x 31	117.42
800 & 600 (place of gas tank)	18	15 x 31	115.00
8 N End Fit	15	16 x 22	110.38
FERGUSON			
Rear Mount	24	16 x 32	109.50
T 20 & 30	13	14 x 23	104.00
35	19	16 x 27	107.00
INTERNATIONAL			
Farmall A or B	20	16 x 28	113.50
Farmall H* (Standard)	27	20 x 27	122.75
Farmall H* (Special)	39	24 x 27	140.54
Farmall H (Underhood)	22	16 x 30	114.34
Farmall M* (Special)	39	24 x 27	134.96
Farmall M* (Standard)	27	20 x 27	122.85
Farmall M* (Crossmount)	37	24 x 25	133.22
Farmall M (Understeering)	28	18 x 32	130.69
Farmall C and Super C	20	16 x 28	104.00
Farmall 300	22	20 x 22	134.26
Farmall 400	38	24 x 26	139.85
Utility 300	19	14 x 33	107.90
W6	25	20 x 24	116.93
W9 (Standard)	41	20 x 35	126.62
F-30	26	18 x 30	125.51
W9 (Special)	54	24 x 35	134.25
F-20	33	24 x 24	125.50
MTA	41	20 x 35	132.69
MASSEY HARRIS			
101 Jr. & Sr.	25	20 x 24	124.41
44 (Row Crop)	33	20 x 30	120.98
44 (Wheatland)	26	20 x 24	124.57
30	19	18 x 24	114.92
55	32	24 x 23	133.75
22	11	12 x 22	126.34
33	27	20 x 27	122.85
MINNEAPOLIS MOLINE			
UB	33	20 x 30	120.98
UTU & 1955 UTB High Mount	33	20 x 30	120.98
Z & ZUT	26	18 x 30	120.82
UTU Hood Level End Fit	27	20 x 27	122.85
1951 ZA	24	16 x 32	126.12
UTI	28	18 x 32	132.53
GTB (Special)	60	24 x 38	153.27
GTB (Standard)	45	20 x 38	136.05
OLIVER			
70 (in place of gas tank) End Fit	20	18 x 24	118.50
77 End Fit (in place of gas tank)	20	18 x 24	118.50
88 Super (in place of gas tank)	33	20 x 30	120.00
55 Super (in place of gas tank)	18	15 x 30	112.00
60 (in place of gas tank)	22	20 x 22	116.70

All Prices F.O.B. Denton, Texas

***Steering shaft through tank.**

Whatever You Need in Quality LP-G Equipment

THERE'S A Nor-Tex UNIT READY FOR DELIVERY



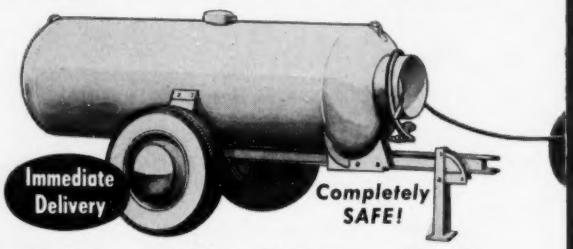
Sell Tractor Conversions . . .

A Real Customer Service!

Conversion business is booming! Users report up to 60% savings on fuel cost . . . Oil consumption amazingly reduced up to 80% . . . Engine wear reduced 75% . . . Sensational 2 to 1 engine life ratio . . . Oil dilution and carbon deposits practically eliminated . . . Repairs slight, due to absence of sludge, varnish and gum . . . Replacement of parts practically nil! TELL these advantages of LP-Gas in Internal Combustion Engines and you'll SELL conversions of all types of mobile and stationary equipment.

Nor-Tex FARM CART

Spots The Fuel Where It's Needed!

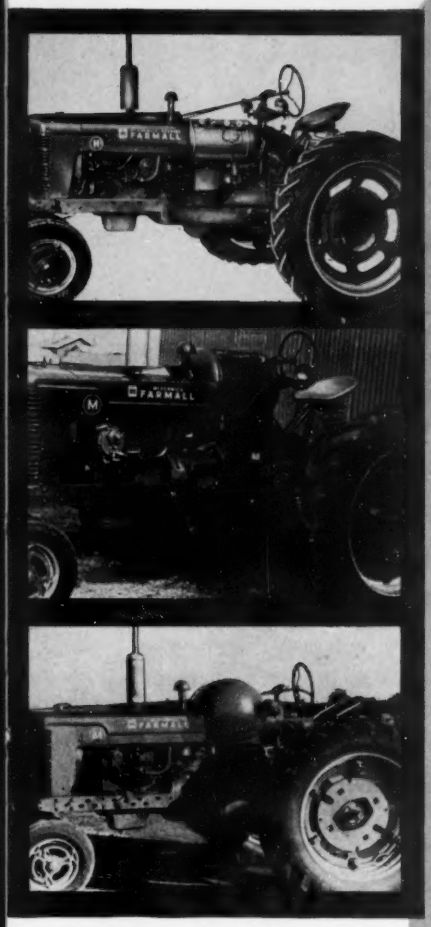


150 WG	$234.30	300 WG	$301.50
250 WG	272.10	500 WG	364.50

Farmers save many hours by placing their fuel supply right where they need it with the well-baffled Nor-Tex Farm Cart. It is completely safe and easy to "spot" with car, truck or tractor. Complete with recessed relief valve, 12½' delivery hose, ¾" OIC valve and hose coupling. Mounted on a heavy duty axle with standard Chevrolet hub and 15" wheels. Add $29.75 if 15" equipment tires are desired. Sturdy I-Beam tongue.

In Canada It's Calgary Steel Tank, Ltd., MacLeod Trail
Sub-Post Office 28, Calgary, Alberta

Central 5416 **NORTH**



Boost Year 'Round Sales and Quotas With PORTABLE Nor-Tex "PONIES"

Nor-Tex "Ponies" (strategically placed for best distribution) are substantially boosting year 'round sales and quotas for bulk plants everywhere. Note the large, *completely enclosed* cabinet, its convenient arrangement of fittings and ample meter room.

Each "Pony" is carefully tested and checked for fast, efficient, trouble-free service and complete safety in dispensing LP-Gas. Designed for easy moving . . . place them in highway service stations, on farms and ranches and in truck and bus terminals. Place them "on-the-job" for contractors and utility companies. They can profitably balance your Winter load!

SIX POPULAR SIZES

500 WG	$ 713.80
700 WG	820.45
1000 WG	1,069.00
2000 WG	1,615.90
3000 WG	2,156.65
4000 WG	2,895.25

• Complete with 110V, Single Phase Motor and Choice of Corken No. 10 or Viking GG 196 Pump • 1¼" OIC Valves and 1¼" Strainers • Rigidly Built on Heavy Skids • Roomy Cabinet with Locking Double Doors • 25' Filler Hose (Coupled and Valved) • White Enamel Finish • Meets All Code Requirements — U69 — W250WP • All Prices F.O.B. Denton, Texas.

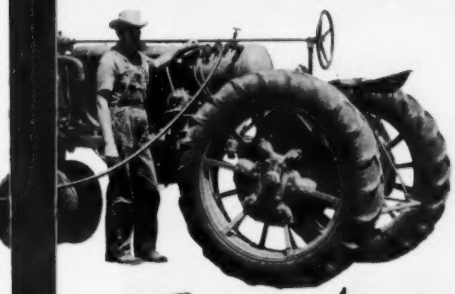
Sizes and Prices Other Than Listed Furnished on Request

EXTRA ITEMS

Signboard	$ 25.00
Lettering	10.00
Neptune Meter, Installed	321.00
Neptune Print-O-Meter, Installed	381.00
5-lb. Fire Extinguisher w/mtg. bkt.	44.22
20-lb. Fire Extinguisher w/mtg. bkt.	70.00
30 Gal. Corken or Viking Pump	170.00
20 Gal. Corken or Viking Pump	150.00
Hand Wind Hose Reel	49.50

Meter Tickets For All Make Meters

Prices on Other Pump Sizes Furnished on Request



Complete LP-G Bottle Stations

PAT. PENDING

Nor-Tex LOW COST LPG Financing
A PLAN TO MEET EVERY NEED!

IN THE U. S. AND CANADA

Write, Wire or Phone for Prices

National Sales Agents For North Texas Tank Co.

Nor-Tex PRODUCTS COMPANY

Popular Nor-Tex STAR Domestic Tanks

Immediate delivery on one or truckload lots. Every custom designed Nor-Tex Star is fabricated to rigid specifications and double tested. They exceed national, state and local requirements. Each tank is smoothly finished and aluminum painted over red oxide. These are the safest, finest quality tanks you can buy.

250 WG	$155.00
500 WG	242.90
1000 WG	414.50

2%, 10 days, Delivered in Truckload Lots in our trade area.

Prices and Specifications Subject to Change Without Notice

TEXAS TANK CO.

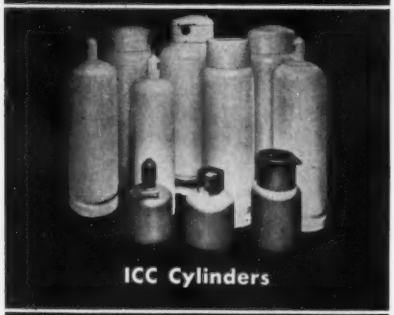
P. O. Box 1219
Denton, Texas

For your volume customers
SCAIFE FueLPack

There's a
SCAIFE CONTAINER
fitted to your need

Above Ground Tanks

Underground Tanks



ICC Cylinders

Lift Truck Cylinders

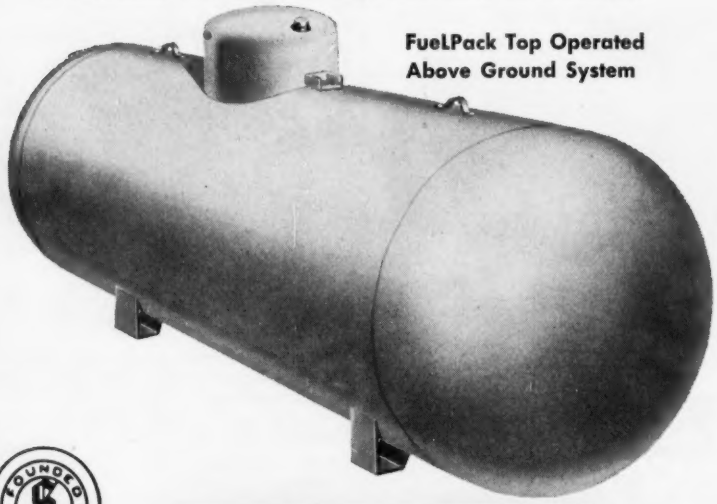
If you're set to cash in on the trend to greater per capita consumption of LP-Gas, Scaife Company offers a diversified line of dependable top and end operated A.S.M.E. Above Ground Systems.

End operated designs are available in water capacities of 250, 285, 500 and 1,000 gallons, and top operated designs in water capacities of 250, 285, and 500 gallons.

You can rely on Scaife FueLPacks to give complete satisfaction. Only the highest quality materials . . . carefully selected for LP-Gas service . . . are used. Each unit complies with the American Society of Mechanical Engineers' Code and is listed by the Underwriters' Laboratories, Incorporated.

Whatever your requirements for LP-Gas containers, there's a Scaife unit that will fit your needs. Write today for more complete information and you'll see why Scaife is becoming the choice of more and more LP-Gas men.

FueLPack Top Operated Above Ground System



FOUNDED 1802

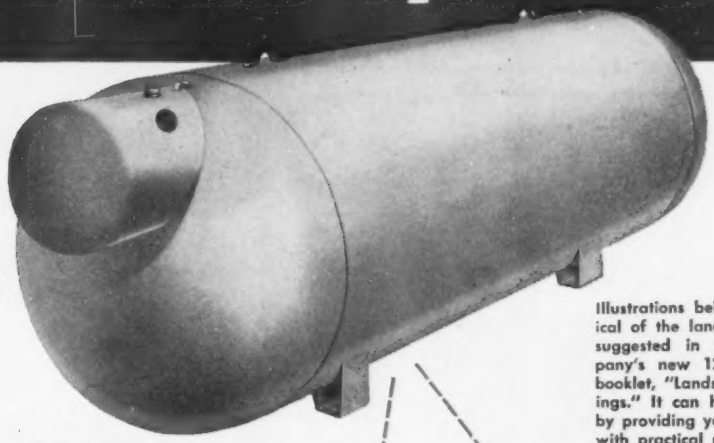
SCAIFE COMPANY

OAKMONT (PITTSBURGH DISTRICT), PENNA.

SALES OFFICES:
GENEVA, ILL.
ATLANTA, GA.
RIDGEWOOD, N. J.
OAKMONT, PA.

MAKERS OF PRESSURE VESSELS, DRAWN SHAPES, AND
TIMKEN SILENT AUTOMATIC HEATING AND COOLING EQUIPMENT

Above Ground Systems



6 BIG REASONS SCAIFE above ground tanks are better

FuelPack End Operated Above Ground System

1 New 16" wide removable curb box

Permits free access to system valves and regulator during tank filling—hook-type hinge can't jam or rust.

2 Lightweight, high-strength steel construction

Tank heads designed for maximum strength . . . built, tested and inspected in strict accordance with the American Society of Mechanical Engineers' code. Each tank carries the Underwriters' Laboratories, Inc. listing.

3 Extra strong lifting lugs

Each tank is equipped with two 1" wide lifting lugs of ⅜" bar stock. Lugs are integrally-welded to the tank for maximum strength.

4 Easy fuel-level inspection

Serviceman or home owner may read the fuel-level gauge without unlocking or opening the curb box.

5 Extra-strong tank supports

Integrally welded to the tank and provided with slotted bolt holes for easy installation where bolts are required.

6 A tank that's shipped dry

Every SCAIFE tank is dry before it leaves the plant.

Write for complete information

Illustrations below are typical of the landscape plans suggested in Scaife Company's new 12-page color booklet, "Landscape Groupings." It can help you sell by providing your prospects with practical planting suggestions to increase the good appearance of their LP-Gas Installation. Use the coupon to get a sample copy today.

Scaife Company
26 Ann Street
Oakmont (Pittsburgh District), Pa.

Please send me your free literature on Scaife

☐ Above Ground Tanks ☐ ICC Cylinders
☐ Underground Tanks ☐ Landscape Groupings

NAME.....

COMPANY.....

ADDRESS.....

CITY..... STATE.....

Model 1600—Favorite of progressive operators for balanced, more profitable domestic loads. 1600 gal. W.C.

Model 1800—Lets you increase your operating area and deliver to large commercial users without back-tracking. 1800 gal. W.C.

Model 2500—Just one run with this new 2500 gal. W.C. model and you deliver five times as much LP gas as old-fashioned 500 gal. units!

CUT YOUR DELIVERY COSTS

with big capacity Butler LPG truck tanks

More deliveries per day — Butler truck tanks give you the extra capacity that pays off in more deliveries per trip, more revenue per truck per day. Big capacity cuts back-tracking—saves valuable driver time.

Faster deliveries — Low center of gravity and load stabilizing baffles make Butler truck tanks safer and easier to handle—help get drivers over their routes faster. Modern, high-speed pumps, exclusive Butler fast-flow three-way piping and optional remote controls speed unloading, cut driver idle time to a minimum.

Less maintenance cost — Beauty serves a purpose in Butler truck tanks. All fittings, pump, meter, and hose are recessed and enclosed for protection from collision, snow and ice. This gives Butler truck tanks a sleek, streamlined look that commands attention and helps make sales. Butler's famous quality construction and careful selection of optional equipment assure you of years of dependable, low maintenance service — over the roughest roads and toughest delivery conditions.

Custom-designed LPG truck tanks for special route needs are available. Also Butler Big B (big barrel) Transports for over-the-road hauling and servicing active commercial routes.

Write the office nearest you for bulletin giving specifications and optional equipment available on standard models shown above

BUTLER STEEL PRODUCTS

BUTLER MANUFACTURING COMPANY

7410 East 13th Street, Kansas City 26, Mo.
910 Sixth Avenue, S.E., Minneapolis, Minn.

Manufacturers of Oil Equipment • Steel Buildings • Farm Equipment • Dry Cleaners Equipment • Outdoor Advertising Equipment • Special Products
Factories at Kansas City, Mo. • Minneapolis, Minn. • Galesburg, Ill. • Richmond, Calif. • Birmingham, Ala. • Houston, Tex. • Burlington, Ontario, Canada

Letters

Best fuel for heating

Florida

Something upon which I want your opinion is the relative merits of L. P. gas and fuel oil for house heating.

Please give me the real facts as we do not want to make any misrepresentations to our prospective customers.

R.C.W.

"Meet the Oil Heating Competition On the Battleground of Efficiency," an article from the July, 1955, issue of BPN, is enclosed.

Essentially, the facts boil down to the following:

1. Several tests were conducted, including one by Battelle Memorial Institute in Columbus, Ohio; Philadelphia Gas Works.; Consolidated Edison Co., and American Petroleum Institute. They all arrived at about the same results.

2. Gas is a more efficient fuel to burn than oil. Only about 58% of the heat in oil reaches the room while 73% of the heat in gas reaches the room.

3. A gallon of L. P. gas contains roughly 91,500 Btu. Seventy-three percent of this, or 66,795 Btu, reaches the room to warm it. A gallon of furnace oil contains roughly 142,000 Btu; 58% of this, or 72,136 Btu, reaches the room.

$$72{,}136 \div 66{,}795 = 1.08$$

This means that one gallon of 142,000 Btu oil did very little more actual heating work than a gallon of 91,500 Btu L. P. gas. The gallon of rich oil did only as much work as 1.08 gallons of lean propane, although the gallon of oil to start with contained as much heat as 1.55 gallons of gas.

—Ed.

Fuel cost not dependent on volume in tank

Kansas

One of our customers says that he was told that if he would never allow his 1000-gal. propane tank be filled over 60% full he would realize a large saving on his gas bill.

We would like to know if a 41-in. by 16½-ft, 1000-gal. tank serving a 75,000 Btu input floor furnace, a cook stove and a 24,000 Btu water heater would give more service per gallon of propane filled to 60% or filled to 90%, and if so, what percentage of difference is there?

R.L.H.

Your customer has been misinformed or he does not understand what his informant tried to tell him. The quantity of liquid in the tank has no effect on the amount of fuel that appliances will use.

The exception to this is when the pressure gets low in the tank, which may or may not be caused by the quantity of fuel. It will be caused by the quantity of liquid in the tank only when the quantity becomes very low and the draw-off is heavy. We doubt even then if the consumption of fuel will be decreased, but appliances may not operate correctly, due to the low pressure.—Ed.

Water heater rentals

North Carolina

I would appreciate it if you could give me any information on renting water heaters. I have had this in mind for months, and have the okay from my boss to go ahead on the idea. My boss has the money, and says he will put as much into it as it takes. However, I can't seem to work out the details.

We have a very nice gas business in and around Maxton and I know we could put out a lot of water heaters if we could rent them.

A.N.

We had an article on rental of water heaters in the September, 1954, issue, page 50. There are a number of large companies making extensive use of the water heater rental plan. Most prominent is Suburban Propane Co.

In analyzing the rental of appliances the following are some of the things which should be included in the overall costs of a rental arrangement.

1. A payoff of the heater in a definite time, say three years, five years or a safe average of the life expectancy of the heaters in the area. A $100 heater with a 50-month life expectancy would cost $2 per month to amortize.

2. Installation costs, if included in the rental.

3. Expected service charges for burner adjustment, draining and cleaning heater, etc., as recommend in instructions. A renter will not do it.

4. Repair costs, average expected over life period. Should be a low figure on water heaters.

5. Insurance, office costs for records, invoices, etc., overhead and miscellaneous.

6. Fund for bad risks, moving away without paying and similar losses and non-collected monies.

7. Taxes

8. Interest on investment.

9. Miscellaneous costs such as business licenses, if any special local charges, etc.

It is possible that the American Gas Association has some information on this rental problem. Direct your inquiry to the attention of George Segeler, American Gas Association, 420 Lexington Ave., New York City.

—Ed.

Pumping Problem

Quebec, Canada

We are thinking of putting in an 18,000-gal. storage tank. A railroad siding is about 800 ft from the proposed site.

Would a 3-in. pipe for liquid be large enough? And what size should the vapor return line be?

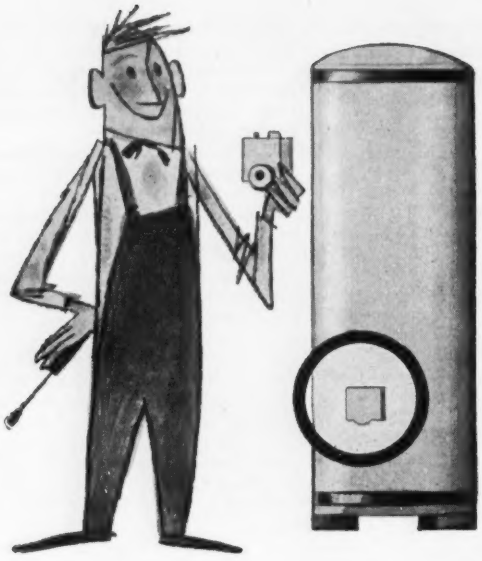
We propose to locate our pump at the storage tank, which would also be used for a bulk plant and for filling cylinders.

G.L.

The 3-in., extra-heavy pipe should be large enough. However, the use of a pump and its location require some consideration. If the 800 ft of pipe slopes down from the railroad siding to the storage area, an appreciable amount (4 or 5 ft per 100 ft) then the pump might operate satisfactorily if it were located at the storage tank. However, if the line is level or slopes up to the pump there will be trouble encountered due to vapor lock, and transfer trouble, combined with excessive pump wear, will be encountered.

The pump, under normal conditions should be located as near the tank car as

Standardization that Cuts your Costs



Robertshaw-Grayson Gas Water Heater Controls have been in continuous production since 1899. During this period more than 20 million units have been produced. Today, they are standard equipment on more water heaters than all other controls combined.

With such large production many economies are possible. Among them are standardization of parts such as magnet assemblies, filters and valves. Uniformity of design and dimensions makes standardization possible, too, in manifold piping, tubes, shanks, pilots and thermocouples. This means savings in engineering time, assembly time and field servicing. All of which mean better controls for you, better service for your customers and lower costs all along the line.

Robertshaw-Grayson

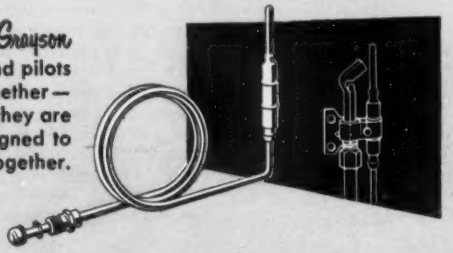
UNITROL®

GAS WATER HEATER CONTROLS

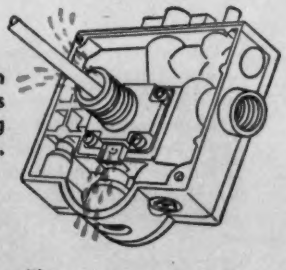
America's most beautiful water heater controls

BY WORLD'S LEADING MANUFACTURER

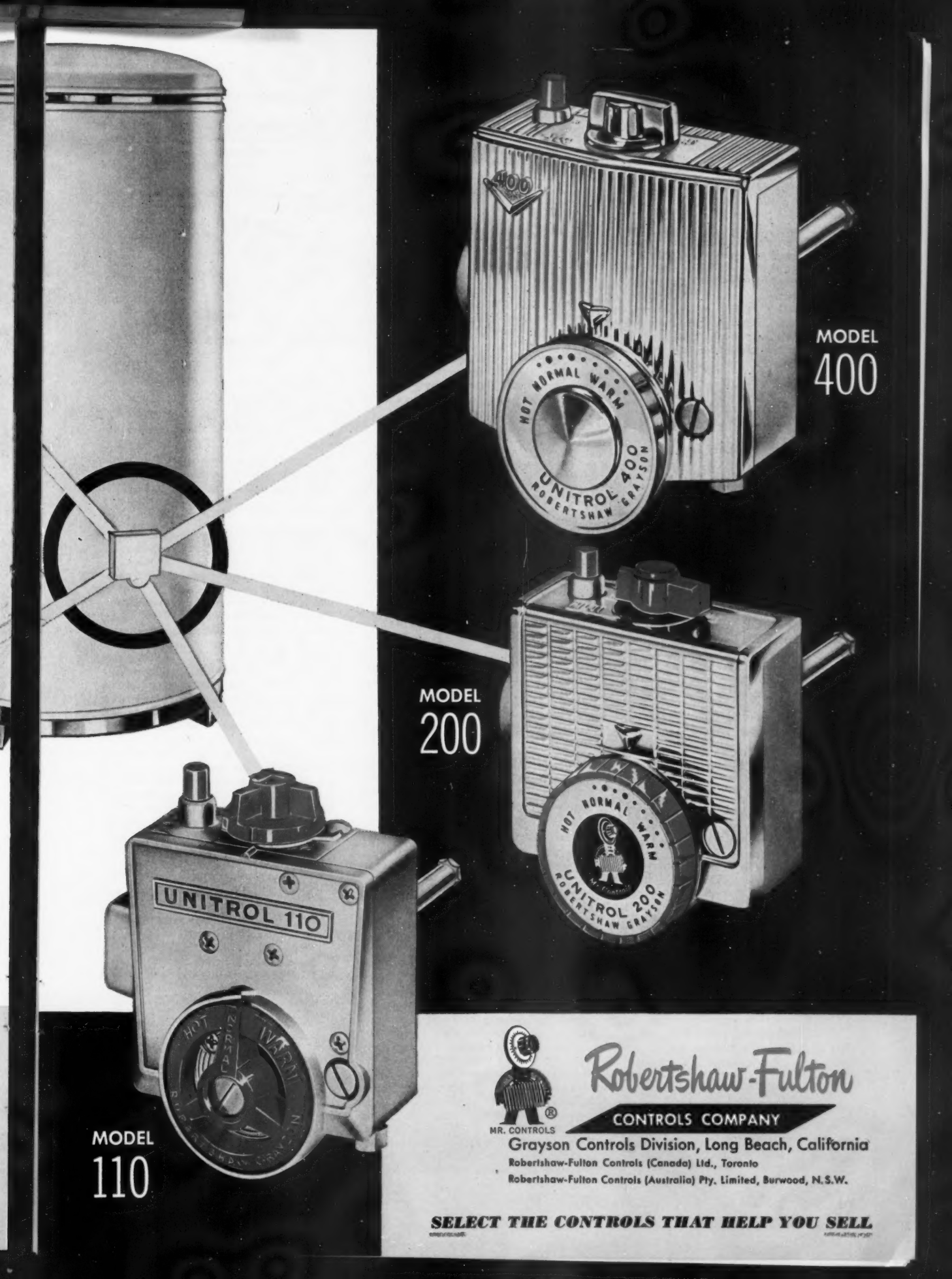
Robertshaw-Grayson thermocouples and pilots belong together—because they are designed to work together.



Air-Gap Construction Throughout Prevents Water Entering Gas Lines.



Adjusted To Give Accurate Water Temperatures. • 100% Shut-Off Of Gas. • All Adjustments Readily Accessible From Front.



MR. CONTROLS®

Robertshaw-Fulton

CONTROLS COMPANY

Grayson Controls Division, Long Beach, California

Robertshaw-Fulton Controls (Canada) Ltd., Toronto

Robertshaw-Fulton Controls (Australia) Pty. Limited, Burwood, N.S.W.

SELECT THE CONTROLS THAT HELP YOU SELL

possible for best results. If it necessitates running power to the tank car location, then it may prove better to use a transfer compressor. It will operate quite satisfactorily if located near the storage.

We recommend not less than a 1½-in. vapor return line and a 2-in. would be better, especially if a vapor pump or compressor is used instead of a liquid pump. The compressor can be used for transferring L. P. gas from storage to truck transports and also may be used for filling cylinders if properly piped.

If the compressor is used for unloading, then a smaller pump may be used for bottle filling. It is better to have two pumps or a compressor and a pump so that your entire plant operation will not be dependent on one piece of transfer equipment.—Ed.

Drying Sand with LPG

Holland

We have a request for equipment to dry sand with propane.

Is this possible and how is it used?

M.G.O.

L. P. gas is used at several plants in this country for drying sand. We are enclosing tear sheets from our June 1951 issue which show a burner system using L. P. gas on a rotary-type kiln. Although this application was for drying a raw line product, the same type system has been applied to the drying of sand and other earth products.

The liquid type burner is recommended for outside jobs, but not for jobs where the liquid fuel must be piped inside buildings.

If the processing job is inside a building, then it is advisable to use a vaporizer at the tank and pipe the L. P. gas vapor at a pressure not over 20 psig into the building to the heating job. Ordinary industrial gas type burners may be used with orifices of the proper size for L. P. gas. —Ed.

Preheated job

Kentucky

We have a problem and we don't know which way to turn.

Our local power plant has one of the 60,000 size turbines that must have some work done on the lower shell, after the rotor and top half is removed. This lower shell is somewhat egg-shaped, with the side and end flanges about 2 ft thick and the center part 1 ft thick—all made of cast steel, weighing approximately 12 tons.

We want to raise the temperature of this mass of metal to 500° F so some cutting and welding can be done to the mass of metal.

We would like to know what kind of pre-heating equipment should be used on this job.

L.M.W.

Heating a large casting like the one you describe should be done by persons familiar with this type of heating service. There are many problems involved, and it is possible that the heating can be done on only those portions which have to be worked on instead of the entire casting.

We do not know of anyone in your immediate area who can provide the service you require. However, there may be someone available from the Verkamp Corp. in Cincinnati, Ohio. The company that manufactured the turbine should be consulted and may be able to recommend or direct the heating procedure.—Ed.

Direct-fired heating

Paris, France

We have a lot of problems for the fitting of industrial receptacles made, for one thing, to clean metallic pieces. These receptacles are generally heated with steam tubes and we should like to change it and work out an adaptation with propane heating. We would replace, in this case, the immersed tubes by an immersed burner which would take first a smaller place in the liquid space and would perhaps have a better efficiency.

We unfortunately have no information or example in France concerning this type of burner but we believe that it exists in your country and in England. We would appreciate very much all information you have about these immersed burners.

P.A.

There are two methods of heating solutions by direct-fired gas burning equipment.

The first is called "immersion heating." In this method, tubes of appropriate size are immersed in the fluid to be heated or welded into the lower portion of the tank containing the solution. Burners, properly sized, fire through the tubes and heat is transferred directly to the fluid through the walls of the immersed tubes. The method is highly efficient and especially good for heating water and cleaning solutions of various types.

The second method is submerged combustion, when the combustion actually takes place in the fluid itself. This method is especially good where evaporation is desired and/or the solution forms heavy scale on the heat transfer surfaces. It improves results where agitation of the solution is desired such as in pickling solutions.

Evaporation by submerged combustion takes place at sub-boiling point temperatures and efficiency closely approaches 100 per cent of the net heating value of the fuel.

Equipment for both methods is available in this country. Reference is made to the recent series of articles in BUTANE-PROPANE News by John Abrams. —Ed.

Cylinder comparisons

Pennsylvania

We are having quite a controversy in Pennsylvania about L. P. gas cylinders.

A rule provides that in 1956 we must get rid of all ICC cylinders and replace them with ASME cylinders. Kindly tell me the differences in tests and materials for the two.

C.E.C.

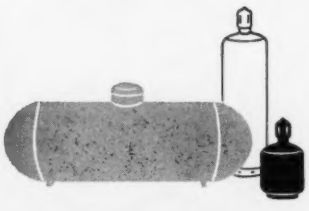
The ICC cylinders are made of lighter gauge metal, but they receive just about the same test pressure as the ASME Code. ASME cylinders and vessels have a minimum thickness requirement of 3/16-in. which makes them much heavier to handle and move about.

The designation ICC 240B means that the cylinder is manufactured under the regulations set forth by the Interstate Commerce Commissions Regulation for a working pressure of 240 lb per sq in. gauge. The test pressure for this cylinder is 480 psig. A cylinder designated ICC 300B has a working pressure of 300 psig and is tested at 600 psig.

An ASME cylinder is also tested at twice its rated working pressure. So a 200 lb working pressure cylinder or tank is tested at 400 psig and a 250 at 500 psig. Generally the steel used in an ICC cylinder will be higher quality and higher tensile strength material since the lighter gauge material is used. Because the ASME sets a minimum thickness of 3/16-in. on the shell, lower tensile strength materials are used.

ICC cylinders must be examined and condition recorded by a competent person every five years. No such requirement is set up for ASME cylinders.

There are thousands of ICC cylinders in L. P. gas service for every ASME cylinder. The ICC bases its design and specifications on years of experience and exhaustive tests. The cylinders manufactured under its codes are good, safe units.—Ed.



This key can open the door to greater LP-Gas sales • • •

Here are three good reasons why it will pay you to buy Gulftane LP-Gas:

1 High quality—Gulftane is produced in plants of the latest design under accurately controlled conditions to specifications that meet the highest standards adopted by the LP-gas industry. It is free of moisture, gum, tar, dust, dirt, and sulphur. Or, to put it another way, Gulftane is the same high quality as Super-Refined No-Nox Gasoline and the other well-known products that carry the familiar Orange Disc trade mark.

2 Dependable supply — many natural gasoline plants and refineries, plus adequate storage, assure reliable, continuous supply.

3 Prompt delivery service—modern Gulftane producing plants strategically located throughout Gulf's wide-spread marketing territory, along with a fleet of new tank cars, assure prompt, efficient delivery service.

Also ready to serve you is Gulf's experienced engineering and marketing personnel. Get all the facts concerning Gulftane service—contact your local Gulf District Office or your nearest Gulf Division Sales Office (see addresses below).

131 Ponce De Leon Avenue
Atlanta, Ga.

31 St. James Avenue
Boston 17, Mass.

Gulf Building
Houston 2, Texas

127 Elk Place
New Orleans 13, La.

17 Battery Place
New York 4, N. Y.

1515 Locust Street
Philadelphia 2, Pa.

National Bank Building
Toledo 1, Ohio

P. O. Box 1679
Denver 1, Colo.
(Zone Office)

230 No. Michigan Ave.
Chicago 1, Ill.
(Zone Office)

GULF OIL CORPORATION
GULF REFINING COMPANY
1822 Gulf Building, Pittsburgh 30, Pa.

MEMBER national LP-GAS PROMOTIONAL program

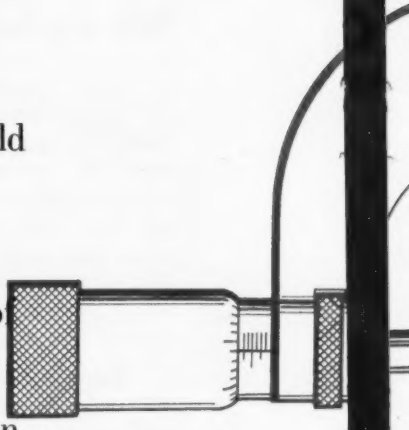
Trinity

TRINITY

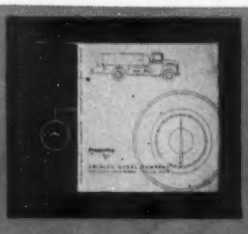
THE MARK

OF PRECISION ENGINEERING

Trinity's products are known all over the world as the finest there is. Years of experience in building Delivery Equipment guarantees you exceptional operating performance, economy of upkeep and repairs, and bonus payloads. A TRINITY Unit is truly your mark of distinction . . .



Remember . . . the successful dealer saves time – saves money – does more business in TRINITY EQUIPMENT.



the NEW TRINITY STORY

Write today for your beautiful 16-page booklet covering the entire Trinity line of truck tanks, storage tanks and transports.

MEMBER LIQUEFIED PETROLEUM GAS ASSOCIATION INC. LPGA

Trinity goes to Mexico

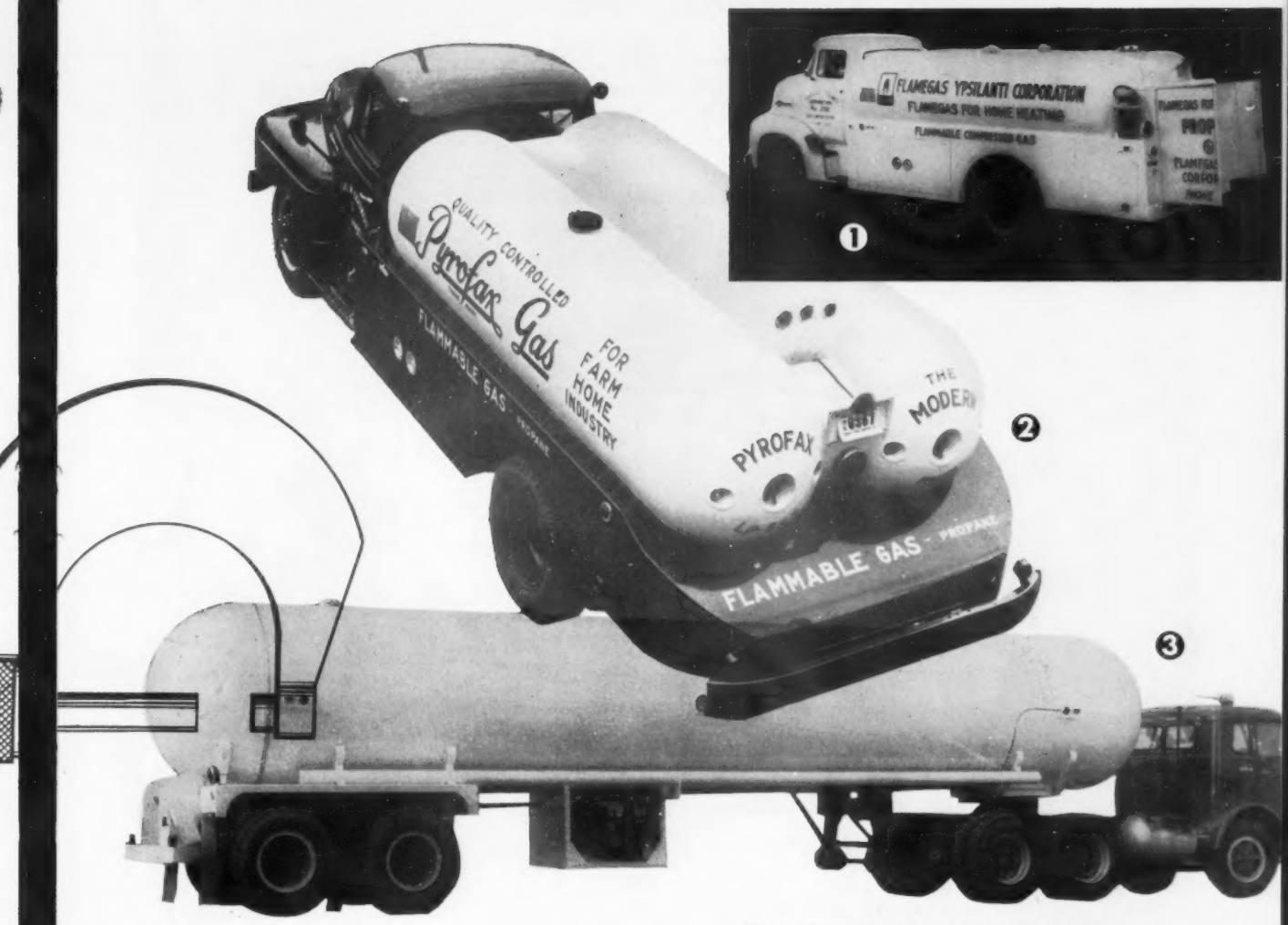
— TATSA —

Tanques de Aceros Trinity

S. A. Calle Poniente 150-#734

Mexico 16, D.F.

3301 SOUTH LAMAR STREET



① **111 2300 WG 46" Twin-XR-23,400# GVW. 17,000# Rear Axle**

② **106 250 lb. WP and ICC MC-300-1400 WG or 1700 WG Capacity**

③ **9275 WG-26,000# 76½ I.D. Rig Total 49'—4" W.P. 265#—Gross W.T. w/87½% Propane 70,000#**

ASK US—about financing your new trucks, 25% down, balance monthly.

Trinity

TRINITY STEEL COMPANY, INC.

EVEREADY GAS SYSTEMS

DALLAS, TEXAS • HA 8-8321

Truth -
your strongest
selling tool
AMERICAN GAS ASSOCIATION
TESTED · APPROVED · CONFORMS WITH NATIONAL SAFETY REQUIREMENTS
REPLACEMENT OR REFUND OF MONEY
Guaranteed by Good Housekeeping
IF NOT AS ADVERTISED THEREIN

Temco's Automatic Gas Floor Furnace has not only the exclusive new Ceramic-Clad* heat exchanger, but also a number of other top features that you can sell straight, without need for exaggeration:

*Trade Mark Registration Pending

★ Quickly, easily installed; fits right into floor!

★ Requires no basement, no costly excavation, no remodeling!

★ 20-year warranty on Ceramic-Clad heat exchanger!

★ Approved by A.G.A.; Guaranteed by Good Housekeeping!

MEMBER NATIONAL LP-GAS COUNCIL

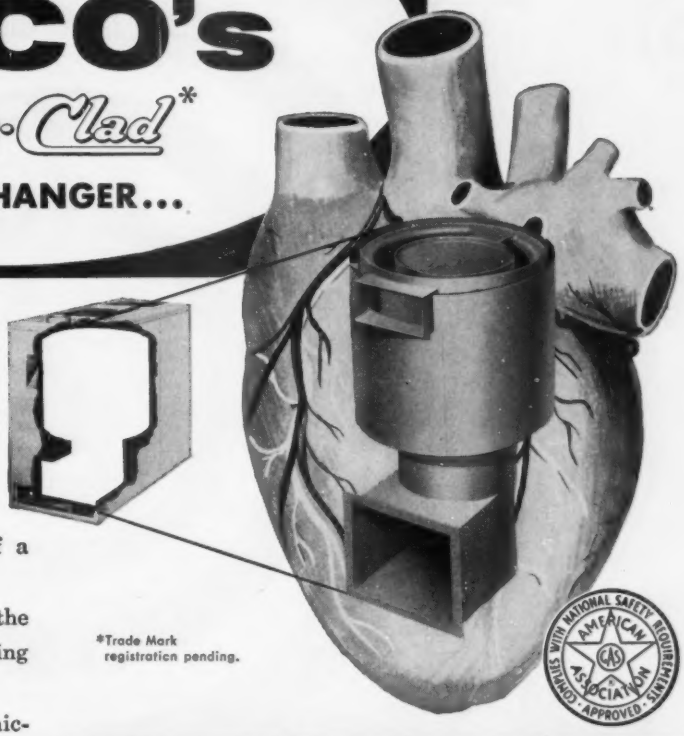
Your key to Local Leadership in Floor Furnace Sales!

Let's get to the HEART of the matter–

TEMCO's

Ceramic-Clad*

HEAT EXCHANGER...



...WITH WRITTEN

10-year warranty!

The heating system is the heart of a home.

Similarly, the heat exchanger is the heart of any automatic gas central heating unit.

That's why TEMCO's exclusive Ceramic-Clad process is important to you.

The heat exchangers in all TEMCO Lo-Boys, Hi-Boys, Gravity Furnaces and Counter-Flo Furnaces are finished in Ceramic-Clad — the "Lifetime" Porcelain Enamel finish that is impervious to rust and will never burn out.

Ceramic-Clad, pioneered by TEMCO, is similar to the finish used for jet aircraft combustion chambers. It's capable of withstanding temperatures far higher than any furnace will ever reach.

And in addition to Ceramic-Clad TEMCO brings you other outstanding features such as exclusive Uni-Port Burners and silent operation.

Turn to TEMCO for the best in gas central heating

*Trade Mark registration pending.

AMERICAN GAS ASSOCIATION APPROVED – COMPLIES WITH NATIONAL SAFETY REQUIREMENTS

TEMCO, inc.

NASHVILLE 9, TENNESSEE

"Gas Heating Specialists for the Nation"

"THE COMPLETE LINE OF GAS HEATING EQUIPMENT"

ROOM HEATERS • FLOOR FURNACES • WALL HEATERS
WARM AIR FURNACES AND AIR CONDITIONING

TEMCO, Inc., Department B-827
Nashville 9, Tennessee

Please send me the full story on TEMCO's new Ceramic-Clad process and TEMCO's complete line of automatic gas warm air furnaces.

Name _____

Address _____

City _____ Zone ____ State _____

the target is the same.....

And when you hit the bull's-eye
you get expert, personal assistance
all the way around.
Let us tell you about it.
CONTACT TULOMA TODAY!

LPCH

MEMBER

TULOMA GAS PRODUCTS COMPANY

PHONE CHerry 2-3261 • BOX 591 • STANOLIND BUILDING • TULSA 2, OKLAHOMA

beyond the mains

TRENDS ARE GUIDEPOSTS TO FUTURE PROFITS. Independent dealers will be wise to plan their long-range programs with full consideration of two trends that will inevitably affect the future of their operations. These are the rapid grouping of numerous former independents into large and well financed consolidated companies, and the increasing number of operations that are owned, controlled or financed by the major producing companies. Both these movements parallel what has taken place over the years in the marketing of gasoline and other major petroleum products. For that matter, it is also closely parallel to what has happened in the transportation and public utility industries. These trends seem to be characteristic of all lines of business that deal in products or services that are essential to the lives of the majority of the population.

Which is another way of saying that competition will become tougher as time goes on. This is not necessarily a gloomy prediction. But it is a definite indication that every independent LPG dealer can always find ways to keep his business strong and healthy. With continuing good profits he can stay independent as long as he wants to buck the competition of the larger organizations. He is always in a favorable position to sell to or merge with his larger competitor if he cares to do so. And under our peculiar tax laws he will probably reach a position where he can make more profit by selling out or joining the competition than by continuing to compete. His problem is to stay strong and pick his time, with the alternative of forming his own consolidated organization to meet his competition on even terms. The weak dealer also has two ways out--to strengthen and improve his operation, or to get out while the getting is good.

FOR THOSE DISCOURAGED SOULS who lament the slow progress of tractor conversion to L. P. gas, Iowa State College has a word of hope. That, they say, is "standard pattern" in the adoption of improved practice. Seven years elapse, they say, between the time a farming practice has proved practical for a particular area and the time when the proved practice has become generally accepted in that area. What does it prove? That the balancing of our industry's winter/summer ratio by means of agricultural uses is a long, slow fight. That the farm people most

Continued

YOU'LL FIND

Selling Magic

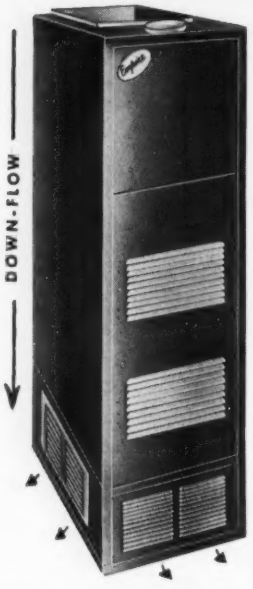
IN THE

New Empire

FAST SELLING LOW COST GAS CENTRAL HEATING UNIT

EASY TO INSTALL—FITS IN SMALL SPACE

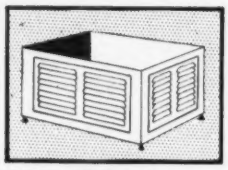
Here is a Gas Central Heating Unit that sells itself on demonstration. Its whisper-quiet operation appeals to your customers. Rugged construction means trouble-free operation. EMPIRE Forced Air Furnaces move more heat, and deliver a certified rated air capacity, from a newly styled, eye-appealing unit. Important to you, too — these furnaces are priced competitively to give you a volume market, and bigger profits.



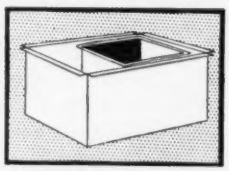
MODEL No. CFA 6100
100,000 B.T.U. INPUT

MODEL No. CFA 675
75,000 B.T.U. INPUT

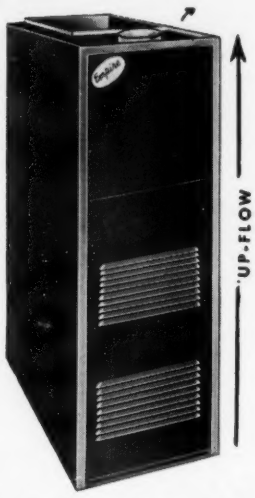
OPTIONAL PLENUM HEATING SYSTEMS



MODEL NO. CFA-1
ABOVE THE FLOOR PLENUM

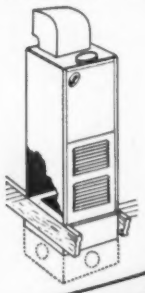


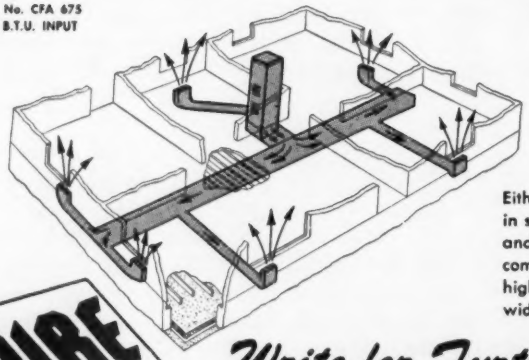
MODEL NO. CFA-2
THRU THE FLOOR PLENUM



MODEL No. FA 756
75,000 B.T.U. INPUT

MODEL No. FA 1006
100,000 B.T.U. INPUT





AMERICAN GAS ASSOCIATION APPROVED

MEMBER
national LP-GAS PROMOTIONAL program

Either combination will cost less to install. Compact in size, the above the floor combination of furnace and CFA-1 plenum is 62" high. The thru the floor combination of furnace and CFA-2 plenum is 50" high above finish floor. Both combinations are 17" wide and 27½" deep. Saves valuable floor space.

Write for Further Information

EMPIRE STOVE COMPANY
BELLEVILLE, ILLINOIS

important to the progress of our program are those who are already recognized as the local leaders--those who are most likely to be imitated the soonest. That those who sell tractor conversions should muster the courage to sell their customers the kind of conversion that will really pay off, instead of a sloppy, skimped-up job that will leave the farmer wondering why he ever got talked into that.

TANKS WILL COST MORE THIS FALL. The steel industry is negotiating a new wage contract. Production may be interrupted by a strike, but even if that does not happen the available supply of plate is short. There seems to be no way of improving this situation in the near future, and if production stops or lags it will become worse. Dealers will do well to anticipate their tank requirements for the fall months and get their orders placed--there will be a competitive advantage in having tanks on hand when the season for peak heating installations comes on. Financing is available under favorable terms in more places, including in some cases the tank manufacturers.

ONE OF THE TRAGEDIES OF MODERN DISTRIBUTION lies in the tendency of many alleged business men to whittle pennies off the price instead of garnering dollars through better selling and better service. The public is far more interested in better living than in what it costs to live better. No survey in recent history has shown that price is the most important factor in the customer's selection of a competitive product or service. Results are most important--after that comes price. Few people care whether the energy to cook their food or heat their water comes to them through a wire, a pipe, or a copper tube from a cylinder or tank in the yard. They want convenience, comfort, efficiency, dependability, modernity, pleasant relations with the supplier, at a price they can justify to themselves. That is modern living. And if you want a still more potent example than you see every day in your own business, just consider the number of 300 horsepower automobiles being driven by 100 horsepower drivers who have 50 horsepower incomes. You may think you are selling gas, but your customers are only buying what gas will do for them.

Earl Abell

Puregas gets stamp of approval

Whenever a liquefied petroleum gas tank car or transport takes on a load of PUREGAS it gets Pure's stamp of approval. It means that the LP-Gas in that car or transport has passed rigid specifications. It means it's moisture free . . . exceeds NGAA specifications . . . and is of a uniform quality.

Why not give your customers the *sure* LP-Gas? Give them PUREGAS!

- UNIFORM QUALITY
- FREE FROM MOISTURE (prevents freeze-ups)
- PROMPT SHIPMENTS (in any weather)
- EXCEEDS NGAA SPECIFICATIONS
- DEPENDABLE PRODUCTION

Puregas

The Pure Oil Company, 35 East Wacker Drive, Chicago 1, Illinois • Tampa, Florida, Box 1630 Lubbock, Texas • Houston, Texas, Box 239 Worland, Wyoming, Box 38 • Minneapolis, Minnesota, 1306 South First Street • Denver, Colorado

Be sure with Pure

THE PURE OIL PURE COMPANY, U.S.A.

MODERN DESIGN!

Eliminates Dead Weight!

Super-Efficient Humphrey Gas Burner Is Light, Strong *Formed Steel* With DUAL-FLAME Heads Of *Stainless Steel*

Humphrey "Series A" Gas Unit Heaters are lighter, stronger, more durable and more efficient, due to this exclusive Humphrey Gas Burner.

Ordinarily, burners are made of thick cast iron — satisfactory for small heaters but excessively heavy in ceiling-suspended unit heaters.

Humphrey solved this weight problem by making their burner of light, strong *formed steel*. The exclusive "Dual-Flame" heads are *stainless steel* — efficient, self-cleaning, and highly resistant both to heat and corrosion.

This great Humphrey Gas Burner is one of many quality features that make Humphrey Unit Heaters first choice of those who want the best in service and dependability.

GENERAL GAS LIGHT CO., Kalamazoo, Mich.

Automatic Gas

Humphrey UNIT HEATERS

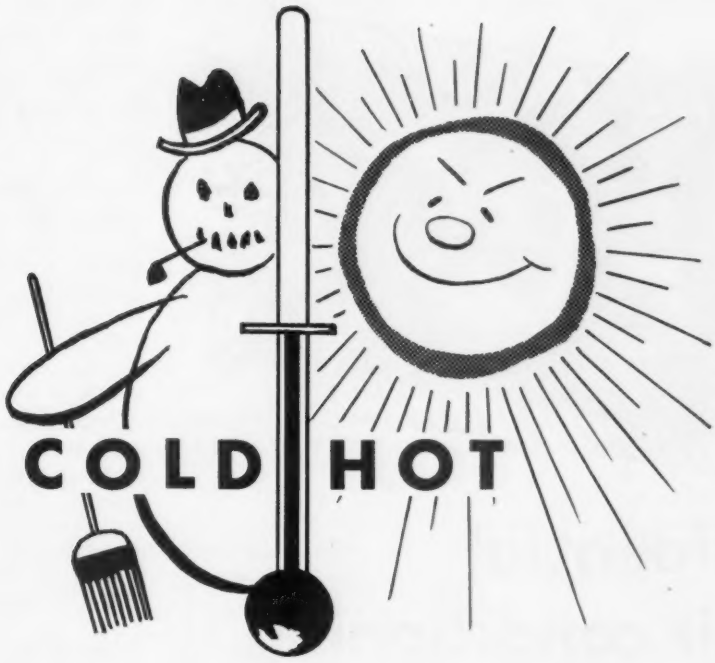
L-P GAS IS NOT A SIDELINE AT TEXAS NATURAL

The Texas Natural fleet of tank cars is one of the largest in the nation and is growing all the time. That is one reason you can depend upon fast, on-time delivery when you buy Texgas.

It is natural that you will get a top-quality product, and better service from a company that specializes in the manufacture and delivery of LP-Gas. So make your next LP-Gas contract with TEXAS NATURAL GASOLINE CORPORATION, 800 Enterprise Building, Tulsa, Oklahoma.

BUTANE
PROPANE
NATURAL GASOLINE

TEXAS NATURAL
Texgas
GASOLINE
CORP.



Year-round comfort conditioning: a rewarding challenge for dealers

THE motel sign says "Steam heated—air conditioned." The factory ad enlisting personnel promises year-round comfort in office and shop. On the theater marquee the lights say, "15° cooler inside." The commuter rides in a climate-controlled train from his year-round comfort-conditioned office to the suburban home in which he has just replaced the automatically stoked boiler with a combination forced air furnace and summer air-conditioning unit. In his evening paper a half page ad tells him that Hoozis Appliances Inc., has already this year installed 8 carloads of room air conditioners in the living-and-bedroom windows of his neighbors. Then the manager of the dairy in which he owns an interest phones to tell him that the July profits will be up because the new air conditioning system in the milking parlor and the sprinkler-cooled sheds in the feed lot have encouraged the cows to give seven pounds more milk per bossie at each milking.

This is where you come in. Year-round indoor climate control is not coming—it is already here. People want year-round protection against extremes of weather. They want warm feet in winter and dry shirts in summer. And all over the country manufacturers of heating and cooling equipment are in production, or in development programs to give these millions of eager potential customers what they want.

You are the local apostle of better living and more comfortable homes. Perhaps you only supply that comfort on a part-year basis—heat during the winter months. Through the years ahead somebody is going to supply that additional comfort, and the better health that goes with it, through the summer months. Look this fact squarely in the eye; at the present time most of the energy used in air-conditioning comes through the power line. Gas air-conditioning is lagging behind, but it is coming from a number of sources. Perhaps —we hope—units operating on L. P. gas will be well developed and in plentiful supply within the next few years. In the meantime a great many units operated by electricity will be sold, and some of your customers will be the buyers.

You have a decision to make. Shall you try to sell your present customers the best air conditioning units you can now procure, and thus keep them depending on you for appliance service, or will you keep your business on an all-gas basis and let the electrical industry put in the cooling units, and at the same time do their utmost to get the whole house wired for heavy appliances and eventually replace your good LP appliances with others that burn kilowatts instead of propane?

The decision is yours alone—we have no recommendation to make, because the answer in any community depends on conditions in that community, and they will vary from here to there. To help you make that decision correctly we are presenting the story of year-round comfort-conditioning on the following pages. ■

The ABC's of residential air conditioning

All-year air conditioning includes cooling, something relatively new to most L. P. gas dealers. The basic data given here is a foundation upon which the dealer can add further knowledge of summer air conditioning to be better informed himself and to better inform his customers.

By MARTIN A. BROWER

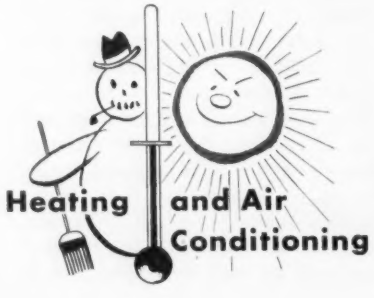
ONCE the L. P. gas dealer has decided to carve himself a piece of the lush new residential air conditioning market, he will have to acquaint himself more fully with what summer air conditioning actually is and how the systems he will be selling operate.

To most people, including prospective customers, the words "air conditioning" will bring to mind the cooling of a room or a complete home, but that is only partially true. Actually, air conditioning includes not only cooling — or heating in the winter — but also takes in humidity, circulation, ventilation, air cleaning and odor control. In short, air conditioning means providing a constant supply of air which has all of the qualities desirable for complete comfort, highest personal efficiency and best health. *(Fig. 1.)*

Although the first impetus to residential air cooling was given in the 1930s when equipment specifically designed for residences was introduced, early installations used commercial and industrial methods as the basic for estimating types of units and loads, and results were not as satisfactory as desired.

Basic differences in estimating residential and commercial summer air conditioning include the design temperature, the type of internal load in the commercial area and the method of calculating equipment size.

Summer air conditioning units are rated in "tons." A ton of refrigeration is a quantity unit which originated in the days when ice was the principal source of summer cooling. The ton is defined as the cooling effect realized when one ton of 32° F ice melts to water at 32° F. The ton therefore represents a unit cooling effect of 288,000 Btu. In common practice, the ton is usually considered a rate unit instead of a quantity unit, and is taken as 288,000 Btu per day (24 hr).



So far, there are no pat formulas for computing all of the variables that must be taken into account in calculating the best type of unit for each type of residential cooling problem. With the present day demand for residential cooling, however, manufacturers and various organizations are working at top speed to come up with all of the answers as soon as possible.

Selecting equipment capacity

Determining the capacity of cooling equipment for a home is no different basically than selecting the capacity of a heating unit. Proper equipment is that which, when properly installed, maintained and operated, will satisfy the customer.

A temperature of 75° F will eventually be used as the basis for design of both cooling and heating systems, according to experts in the field. At present, an indoor design temperature of 75° F is used only on deluxe installations while most summer systems are designed on the basis of 80° F indoor temperature.

In selecting equipment capacity for residential cooling, internal loads such as heat from lighting and appliances are not considered to as great an extent as in calculating an industrial or commercial load, except where an unusual load is added.

Several methods have been worked out for calculating a cooling load for a specific residence in a specific area. Naturally, the accuracy of the calculation is important because a unit that is too small will not do a good job while one that is too large will be more expensive than necessary and undesirable humidity might result. It is best for dealers to consult the equipment manufacturer or a reliable air conditioning engineer where possible in calculating the cooling load and thereby selecting the equipment.

Basic cooling equipment

The equipment in an air cooling system that actually removes the heat from the conditioned space is called the "low side." Low sides in equipment developed so far for residential use include three types of systems: a water-cooled coil, a chilled-water coil, and refrigerated coils. *(Fig. 2.)*

A water-cooled coil system uses water directly from supply sources and is the most simple of the three installations. Cold water from the water mains or well is circulated through a coil while air from the conditioned space is passed over the coil to remove its heat and moisture. The cooled, dehumidified air is returned to the conditioned space while the water in the coil is wasted.

Naturally, this type of system requires not only abundant water but water of sufficiently low temperature to do the cooling job. A general rule is not to use such a system unless there is a supply of 52° F or colder water at the peak of the cooling season in amounts sufficient to care for the cooling load without rising in temperature more than 10°.

A chilled-water coil system is necessary where cool and abundant water is not available. In a chilled-water system, water is cooled to the desired temperature by using mechanical refrigeration. Water is circulated through a closed system having two coils. In one coil the chilled water conditions the air, while in the other, the heat is removed from the water. This is called a duplex system.

A refrigerated coil system makes use of a refrigerant which evaporates in a coil over which air passes. The evaporation takes the heat from the air and the heat is passed directly to the refrigerant.

In both the chilled-water coil and the refrigerated coil systems, the heat from the conditioned space ends up in a refrigerant. In the case of the chilled-water system, however, the heat passes from the air to the water and from the water to the refrigerant. With a refrigerated coil system, the heat transfer is directly from the air to the refrigerant. In either case, the heat must be removed from the refrigerant.

Removing the heat from the refrigerant is the job of the "high side" of the conditioning unit. The high side can use either air or water to cool the refrigerant. *(Fig. 3.)*

Fig. 1. Six functions of complete summer air conditioning.

An air cooled high side removes heat from the compressed or hot refrigerant by passing it into a cooling coil over which outside air is circulated. The advantage of air cooling as compared to water cooling of the refrigerant is that no water is required. A disadvantage, however, is the higher operating pressure re-

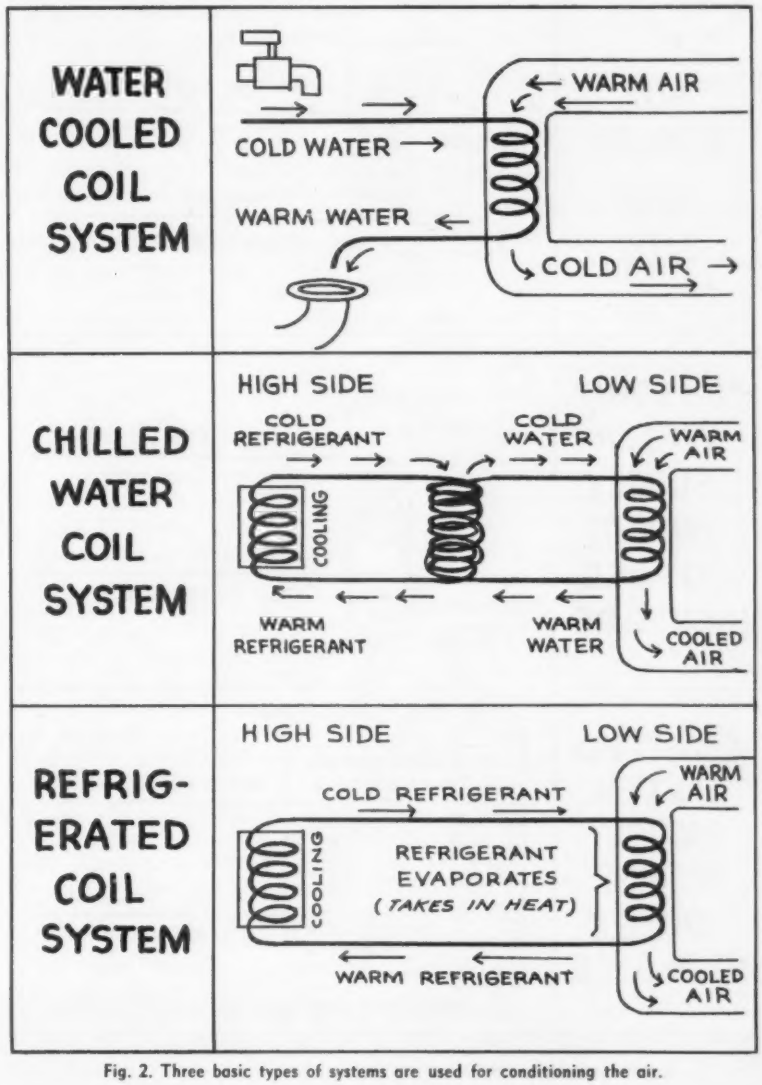


Fig. 2. Three basic types of systems are used for conditioning the air.

quired due to the inability of air to cool as much as water. The compressor will therefore require more power.

Two types of systems for water cooling the refrigerant are used, one requiring a constant source of water. The other type cools and re-uses the same water. In the first type of system, water is passed through the condenser on the high side, cooling the refrigerant, and is then emptied through a drain. The water can be piped to a swimming pool, used in some other way, or wasted. Where water is plentiful, this is the better of the water cooling systems since equipment cost is lower, operating cost is less and a quieter operation results.

Where water is in short supply or is expensive, instead of allowing the water to escape to a drain once it has cooled the refrigerant, 95 percent of it can be reclaimed by evaporating sufficient water to rid the remaining water of heat. Additional equipment, such as an evaporative condenser or a cooling tower, is needed.

Types of air conditioners

Residential summer air conditioners fall into three general clases: the room air conditioner, the central system for cooling only and the central system for cooling and heating known as the all-year air conditioning system.

Room air conditioners are of the window or cabinet type and cool only small sections of a house. Although most of the available room conditioners operate on electricity, they are used by L. P. gas dealers to pre-condition the market, that is, to sell a prospect on having air conditioning in his home.

Window room air conditioners fit into a standard window and vary in capacity from ⅓-1 ton. Air passing through the unit is cooled, dehumidified and filtered. Such a unit requires no water, since the condenser is aircooled. No drain is needed because moisture condensed from the air is evaporated to the outdoors.

A cabinet unit is similar to a window model except that it stands on the floor and requires an opening in the wall for air intake and discharge.

A central system is designed to condition the air in the entire house instead of one or two rooms.

In some areas of the nation, there is little need for heating, but a large potential market for cooling does exist. For such areas, air and water cooled package cooling units are available in capacities from 1-15 tons. Air is circulated through ducts as in central heating.

A system such as this can be vented through existing ducts, if such exist for heating purposes and if duct capacity is large enough.

All-year air conditioning systems and provide the customer with the greatest amount of comfort while providing the dealer with the best load balance.

Although heating and cooling can be had where a heating unit is already installed by adding a separate cooling unit and using the same ducts, all-year or year-round units are available which are more compact and require less space than do two units.

Heating and cooling in a year-round air conditioning system are usually independent of each other with air circulated by a fan passing through the heating or cooling mechanism, only one of which operates at any one time. At present, there is only one all-gas year-round air conditioning system on the market. There are, however, a wide-variety of combination units in which gas does the heating while electricity does the cooling.

Cool air supplied to the conditioned area from an all-year system is usually 15-25° lower than the temperature in the conditioned area. In

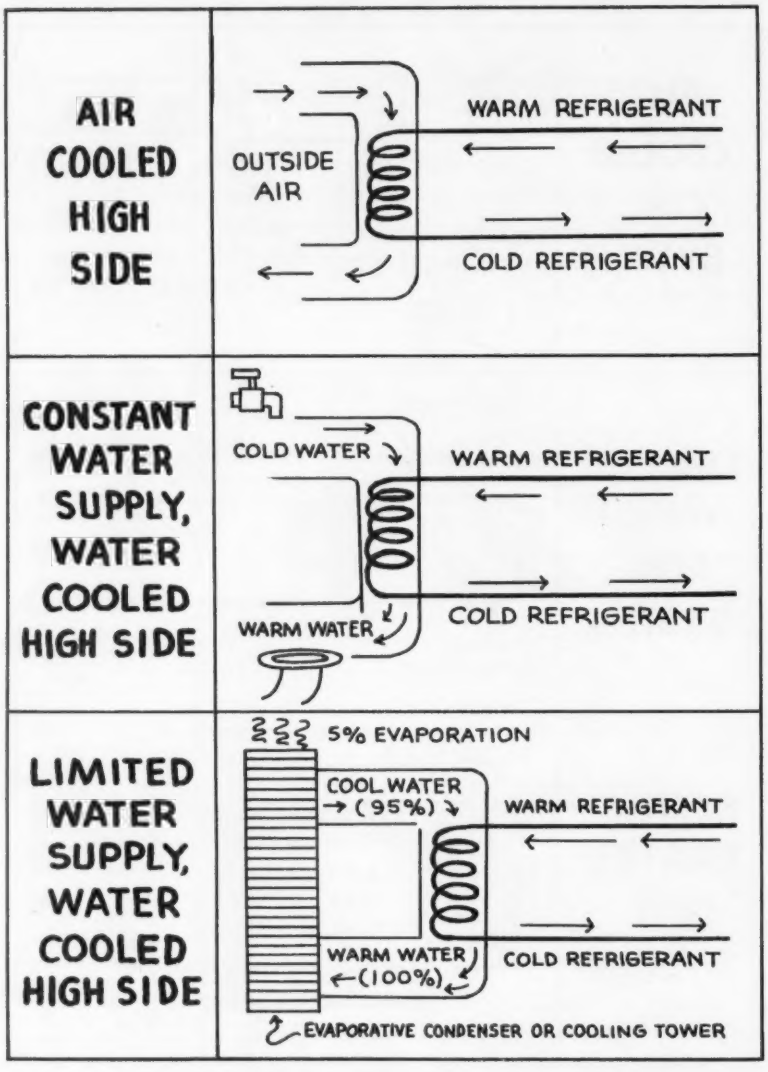


Fig. 3. Three basic types of systems are used for cooling the refrigerant.

order to circulate large quantities of cool air at 55-65° F, the duct size of all-year systems is often larger than that of a heating system.

Because ducting is so important to both heating and cooling and since ducting is different for a year-round system than for a heating system alone, the duct system should be designed and installed by competent engineers.

Importance of outlets

Since cool air is heavier than warmer air, it has a tendancy to fall toward the floor when emitted from duct outlets. Unless supply outlets are properly selected, located and adjusted, air distribution may result in a low velocity of cool air falling on the occupants or a high velocity of cool air striking a wall or other object and splashing on the occupants. *(Fig. 4)*. Two types of outlets are commonly used: (1) registers with fixed or adjustable vanes and (2) diffusers.

(1) Registers distribute the cool air throughout the room into which they empty the air. They are usually located high or low on the sidewall or in the baseboard.

(2) Diffusers are used in the ceiling, wall or floor with a differently designed diffuser for each location. Floor, baseboard and sidewall diffusers blanket the walls with a curtain of cool air (or warm air) and ceiling diffusers blanket the ceiling.

Equipment location

Location of the air conditioning equipment in the home itself depends on the type of unit. In a combination unit, location depends on the accessibility to the duct system, the gas supply and the power.

Considerations in locating equipment should include usability of the basement or other enclosure in which the equipment is located. Other considerations include preferences of the family and their living habits so the unit will allow the family the maximum amount of space for their activities while still allowing the equipment to do its job and be readily accessible.

Noise

Excessive noise is still one of the prime problems in most domestic air conditioning systems. Control of noise ties in with location since installation should take into account areas where quiet is especially desired, such as bedrooms.

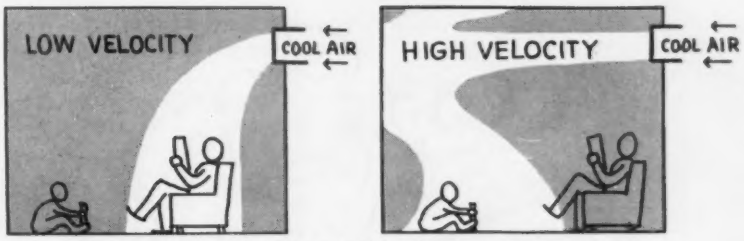


Fig. 4. Too low a velocity or too high a velocity of incoming cool air can produce undesirable effects.

Improper blower and duct sizes will increase noise so these should be carefully watched. Noise can be reduced by the use of vibration absorbers in the refrigerant and water lines, anti-vibration padding under the equipment, and flexible duct connectors. Sound-proofing insulation can also be used with success as in the case of a recent air conditioning installation in a library.

Air distribution

Warm air systems use a low air flow rate while cool air systems use a higher air flow rate. In residences located in moderate or cold climates, therefore, different air flow rates for summer and winter air conditioning are desirable. In warmer climates, however, the summer air flow rate can be used the year around.

The distribution system for the air should be designed for the largest air flow rate to be used.

Number and location of outlets are also important to air distribution. When a register is placed in a high sidewall, for example, the deflection of the air must be different for summer conditioning to prevent air from dropping into the living zone. The living zone is defined as that area from 60 in. above the floor to the floor in which air velocity should not be more than 35 ft per minute.

No objectable air motion in the living zone is had with perimeter duct systems, which give excellent results with air conditioning. Drafts are also controlled by floor diffusers which distribute air in a fan-shaped pattern along the wall, and low sidewall diffusers which blanket the wall.

Velocity at the diffuser face varies with desired supply air temperature. For a supply air temperature of not more than 15° below room air, diffuser face velocities of 500 fpm are used. For a temperature of 20° below room air, not less than 700 fpm is recommended.

Operating costs

There can be no fixed operating cost given for summer air conditioning that will cover all areas and all conditions. Cost of residential cooling during a particular summer depends on such variables as amount of sunshine and rain, number of abnormally hot or cold days, efficiency of equipment and cost of fuel or power.

The cost will depend on the power cost (cost of fuel or power per unit times the units of fuel or power used by a system per hour, times the predicted operating time. For a water cooled system, the water cost must be added to the power cost.

Affects on house design

Like heating, air cooling and all-year air conditioning have resulted in improved house design. Construction practices which reduce the heating load will, of course, also reduce the cooling load.

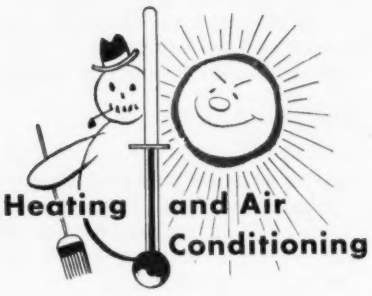
Future house design will be affected by special considerations which will aid in reducing the cooling load. Considerations include insulation, window orientation and means of shading windows, use of attic ventilation, planting of shade trees, and painting exterior walls and the roof a light color.

Like all new markets which open to L. P. gas dealers, summer and all-year air conditioning is new and a lot of information is still lacking. With the demand for such equipment by residential and commercial buildings and builders being as great as it is, however, it is a field that will be well worth the dealer's time. As with other appliance and gas markets, BUTANE-PROPANE *News* will supply L. P. gas dealers all over the world with practical working information as it becomes available. ■

All-year air conditioning

it may cost more to live without it

Home air conditioning is much more than just improved comfort and more enjoyable living. Recent research shows very definite values in improved health and direct financial gains. Benefits of all-year air conditioning should be seriously considered since it may cost your domestic customers more to live without it than it would to buy it.



THE wide popularity gained by air conditioning during the past few years indicates that at least a part of the public believes the investment is worthwhile, but what of the rest? If air conditioning is — and the experts say it is — one of the least saturated markets now existing for fuel and appliances, there are still a lot of people who have either not considered buying an air conditioning system or who have decided against purchase at this time.

What sales pitch can be used to sell the great bulk of the population?

It would be reasonable to assume that the dealer must convince the prospect that money spent on air conditioning will be justified in direct and immediate benefits.

In the case of commercial and industrial installations, the cost is returned in a highly tangible way — with money. Once the dealer makes the prospect realize this fact, he is sold.

Commercial enterprises stand to benefit in two definite ways when they install air conditioning: more customers, hence higher income, and better working conditions, hence higher employee efficiency. Installation of a year-around air conditioning system means more money coming in from more customers and less money going to employees for the same amount of work.

The simplest and yet one of the best sales approaches a dealer might use in selling a commercial prospect involves inducing the prospective customer to sell himself. Richard Pearson of the Day & Night Heater advertising staff is a proponent of this theory. He suggests asking the prospect. Would you rather shop or do business in an air conditioned building or one that is not? The answer is obvious and the prospect usually sees the light immediately.

Industrial shops and plants offer the same opportunity for the buyer of air conditioning to realize greater profits through higher employee efficiency. Air conditioning such work areas as offices will increase efficiency of workers to a great extent, but when it comes to air conditioning the backshop or production line where the manual labor is carried on, studies show that production skyrockets and absenteeism plunges.

Residential air conditioning may not be so easy to sell. The businessman can understand a saving in dollars and cents which will result from air conditioning his place of business, but air conditioning his home is another story. Most persons believe that pure comfort from heat or cold is the only purpose of an all-year system and many decide to be uncomfortable rather than pay for an air conditioning unit.

It has been demonstrated that highly tangible dollars and cents can be saved in the home as well as the business, and a wide range of additional benefits can result from home air conditioning.

Harry Bowser, appliance sales manager for Servel Inc., advocates the time honored sales idea of "selling the sizzle, not the steak." By that he means that the benefits of an appliance should be sold, not the appliance itself.

The benefits of all-year air conditioning might be grouped into four classifications: health, comfort, home maintenance and home value.

Health is one of man's prime concerns. He wants health for his family and for himself. He realizes that not only his happiness but also his pocketbook can be hampered should illness occur.

Health is one of the prime benefits of all-year air conditioning. Just as vegetation, animals and workers do better in controlled temperature and humidity, so the family develops and feels better if conditions of temperature, humidity, ventilation, circulation and air cleanliness are maintained.

The human body can make necessary adjustments to compensate for temperature discomfort within a narrow range. This compensation, however, takes extra energy and puts an added strain on the heart. Outside of the narrow range, the body can do nothing.

The body has a thermostat just as an air conditioning unit does. It is a portion of the brain called "hypothalamus," which reacts to heat and cold to make necessary physiological changes within the narrow operating range in which the body's heating and cooling system works.

An even temperature, without changes from hot to cold, will allow the hypothalamus, the heart and the body's heating and cooling system to rest. In tests, hot weather has increased the load on the heart by as much as 43 percent. Normal activity in 95° weather causes as much heart strain as heavy labor in cold weather.

Sleep is important to health and to comfort. A good night's sleep is the best way to rest the body. Even temperatures throughout the night, regardless of extremes of heat or cold out of doors, will allow a completely comfortable and restful sleep. With an all-year air conditioning system, the entire house is warmed to a comfortable sleeping temperature in the winter, and restless sleep while sweating without covers is avoided in the summer.

Proper nourishment is essential at all times, but eating in the heat of summer is frequently set aside in favor of nothing but cool drinks. Air conditioning encourages hearty appetities in the hottest weather. In the winter, excessive food does not need to be taken in to generate heat for the body.

Body rests

More and better sleep

Better appetites

Fresh, clean air

Fewer colds

Better feeling and disposition

More efficiency at work

Vacations spent at home

More efficiency at home

No drafts, even heat

Less outside noise

In addition to proper sleep and food, fresh air is a must for good health. Again, the all-year air conditioning units on the market offer a filtering system which removes dust and pollen which contribute to hay fever and respiratory ailments, and assures fresh, filtered air at all times.

Air conditioning also eliminates drafts, provides proper air circulation, and maintains a fixed temperature, all of which add up to a reduction of colds. Children are more even-tempered in a conditioned atmosphere and are less likely to be bothered by heat rash.

Comfort is an obvious advantage of all-year air conditioning. Relaxing, sleeping, eating and generally living in a home without being too warm or cold, without drafts and with a well-circulated supply of filtered air adds up to the ultimate in comfort. Such comfort is worth money at any time. But actual financial benefits will also result from the greater working efficiency of the bread winner after an evening and night in an air conditioned atmosphere and from staying at home more instead of running off on jaunts to escape the hot or cold weather.

The housewife, who must remain home all day, will really appreciate the benefits of air conditioning. Her work time will breeze by with the highest efficiency, giving a better job and allowing more time for other activities. And cool kitchens on hot days is something that every member of the family, especially the housewife, can enjoy.

Less cleaning

No cleaning of screens

No need for fans or heaters

No mildew or moisture

The comfort resulting from all-year air conditioning is house-wide comfort, resulting in an absence of hot rooms or cold rooms. In an air conditioned house, a member of the family can step out of the shower into an evenly heated bathroom, pick up a towel which dries faster and walk into the bedroom to dress without passing through a cold or drafty hallway and without entering a cold or drafty bedroom.

Humidity is almost as important as temperature to health and comfort. All-year air conditioning provides controlled humidity at all times. Heating alone, for example, bakes the moisture out of the air and makes nasal passages dry, parches the throat, and gives occupants a choked feeling. Humidity control adds moisture while heating and takes moisture out of the air on hot, humid days while cooling.

Noise control is also necessary for comfort. With air conditioning, windows can be left closed at all times, shutting out all outside noise, providing safety from intruders and doing away with drafts.

Dollars and cents really begin to show in home maintenance and home value, the last two major benefits of all-year air conditioning.

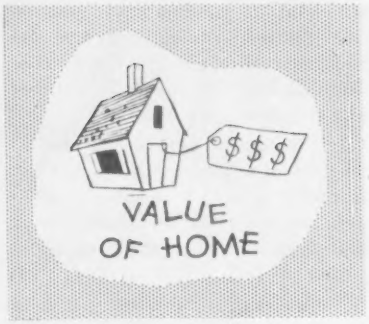
Closed windows and filtered air assure the absence of air-borne grime. Without outside dust entering the home, furniture, rugs and walls stay cleaner and retain new appearance longer. Housework too is made easier and rugs and furniture have to be cleaned less. Tests made after air conditioning has been installed show dusting and vacuuming cut way down.

Maintaining screens, including painting and cleaning, is a thing of the past with all-year air conditioning which does not depend on air through dusty window screens. With windows closed, screens can be forgotton or scrapped.

Controlled humidity prevents mildew so closets are dry and fresh. Woodwork, furniture and leather goods look newer longer.

Buying of fans, humidifiers, dehumidifiers and heaters, of course become a thing of the past.

The resale value of the home increases with installation of an all-year air conditioning system.



Home worth more

New home costs less to build

On resale of the home the original cost of the system might be entirely returned. On building a new home, many costs are saved if all-year air conditioning is installed. Windows can all be of the attractive fixed type instead of the more expensive moving type which must open and close. No screens are required and with no need for cross ventilation, fewer windows are needed.

A leading manufacturer of air conditioning systems made a study recently in 23 states, chosen to represent a cross section of the nation, in regard to the effect of air conditioning in private homes. A 43 percent response was received and the results are tabulated below:

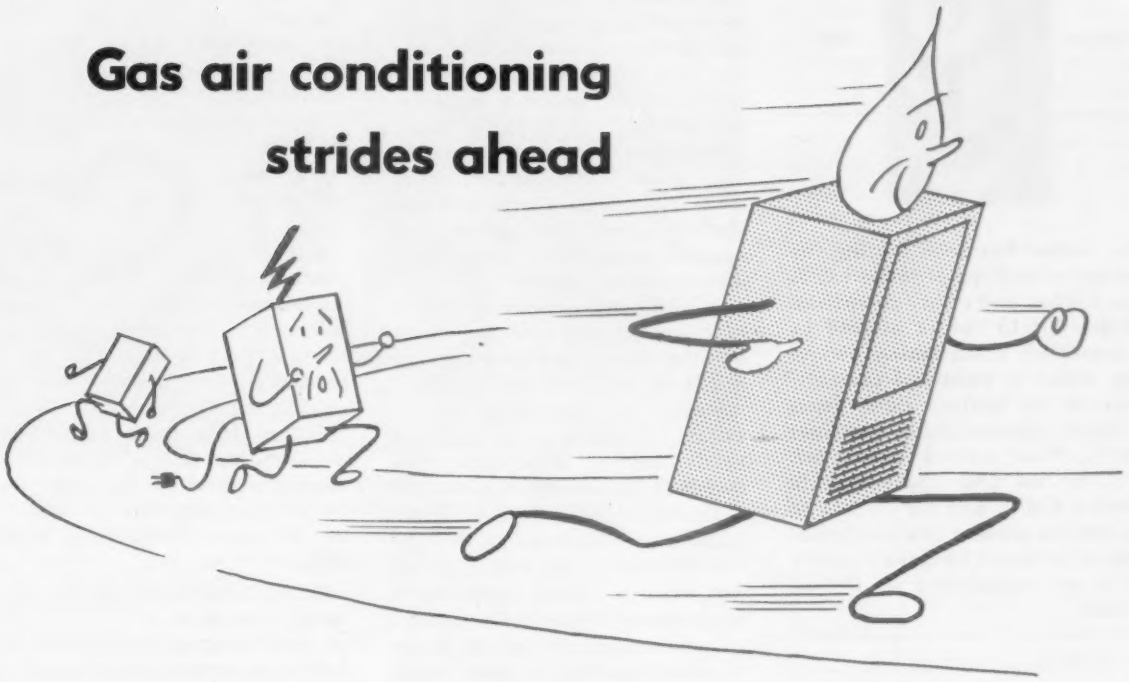
Results of Residential Air Conditioning Installations in 23 State Study

Improved appetites	63%
More hot meals served in summer	75%
Improved dispositions	58%
More recreation time	43%
More energy	63%
Improved general health	65%
Less colds	40%
Less suffering from allergies	48%
Street noise less noticeable	75%
Dusting time reduced	65%
Vacuuming use reduced	40%
Now spend vacations at home	48%

The benefits of all-year air conditioning are many and are not limited to pure comfort, which in itself is important enough to warrant an installation.

It is up to the dealer to make certain that all of his prospects are aware of all of the benefits, many of which, much like a commercial or industrial air conditioning installation, will pay off in dollars and cents. ■

Gas air conditioning strides ahead



By **CLIFFORD E. HALL, Utility Operations Manager** • The Coleman Co., Inc.

A SCANT eight years ago some leaders in the gas industry were warning that electric competition for the cooking load was here. Some of us, particularly in the areas where gas is especially inexpensive, turned a deaf ear to those warning in the smug security of low first cost and low operating cost. With heavy saturation in the cooking field and with strong memories of the penny pinching thirties, we could not see that a range that cost more money to operate and more money to buy and install would ever make any inroads. We had no idea that our competition could steal away what we felt was rightfully ours by pounding away at the idea of modernity.

We had no idea that the thought of an all-electric kitchen really had some appeal for our customers. We did not foresee the money, the vigor and the determination competition would throw into this all-out fight. We know it now.

I bring up this painful history only because I want to emphasize the necessity for us to be on guard against the impending threat to an even greater portion of the gas load. The battle for the heating load will not come tomorrow or next year. It is here right now.

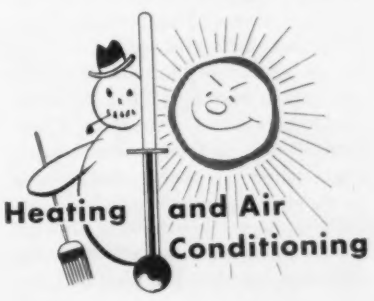
The American Gas Association has recognized this fact by the appointment of a committee to study electric heat pumps. I sincerely hope they will take even more vigorous action in the future.

Gas air conditioning is an important load by itself and we all will certainly want to take every step necessary to obtain this load for the gas industry but, far more importantly, gas air conditioning can be and should be our major weapon in the protection of the gas heating load against the encroachment of electric heat pumps and resistance heating. It should be self-evident that the economic facts of utility plant financing will eventually lead to the use of a single fuel for both heating and cooling.

A deeper study of load factors will provide good reasons why the electric industry is apt to wage a much more aggressive and better financed campaign for the heating load than our industry is apt to wage in its efforts to obtain the cooling load. Reasons for this are found in the basic differences in providing these fuels.

Electricity cannot be stored and the electric utility must have generating facilities and distribution facilities capable of handling peak loads at the very moment of those peaks. Gas on the other hand can be stored and we do not have to have supply production facilities equal to the maximum demand. In the matter of off-peak loads our electric friends have not yet developed anything approximating the interruptible loads which the gas industry has developed.

Thus, while our facilities during



The author has been touring the nation in an attempt to alert L. P. gas dealers and utility companies to the bright future offered by summer air conditioning and to the threat of electrical competition in the heating field, especially as represented by the heat pump. Your editors heard Mr. Hall at an LPG convention in Fresno, Calif., and are pleased to be able to present this condensation of a report he gave recently to a gas association in Dallas, Texas.

off-peak periods at least bring some return, electric generating facilities constructed to handle the maximum peaks go completely unused during the off-peak periods. This is perhaps an over simplification of the situation but the basic factors are certainly obvious.

Doesn't it make sense, therefore, that the electric industry can probably afford to spend far greater sums than would be available to the gas industry in competing for the heating load to balance out the ever growing electric summer air conditioning load? Perhaps we should take a look at just what we face in the way of electric heating competition possibilities.

First, of course, is the heat pump. Let us not be lulled by the fact that the electric heat pump is still high in first cost and is far from competitive in operating cost in the south. Very definite strides are being made by the electric industry in reducing first cost in this equipment, although operating efficiencies are not improving as rapidly as the manufacturers had hoped. Maintenance is still a tremendous problem in the electric heat pump field, a fact which becomes obvious when we realize that this is mechanical equipment which will operate in the neighborhood of 4500 hrs a year as against the 100-200 hrs of operation which is required of a mechanical air conditioning system.

Testimony of people whose homes are presently equipped with electric heat pumps indicates that the comfort level is satisfactory where sufficient auxiliary heat is provided for the colder days.

Resistance heating is another challenge by the electric industry. Here we find a very low first cost coupled with a very high operating cost except in public power areas. Little maintenance is required in this kind of a system and comfort appears to be relatively high with the exception that there is no means to humidify the air satisfactorily.

Further off in the future lies the threat of a heating system powered by its own tiny atomic pile. This sounds like a tremendous threat but upon closer inspection we find many problems that need solving. Not the least of these is the contamination that would be caused by the radioactive wastes from such a system.

Atomic energy for the generation of electricity offers no great threat of cheap electricity since fuel costs are rarely more than 20 per cent of the total consumer cost of electricity and more often average about 12 per cent of the total cost of the electric bill.

It would appear, therefore, that the major immediate threat facing us is the electric heat pump. Should the electric industry be able to develop this system to a point where it might be even remotely competitive we might then face the same sort of situation that we are presently facing in the range market. That is, an appeal to the consumer based on modernity and glamour. We know all too well the substantial amounts of money that the electric industry can put behind such an appeal.

Let us examine, therefore, what the gas industry has to offer both immediately and in the near future to oppose these possible and probable threats to the gas heating load.

First, we can take real pride in the fact that the gas industry offers the very best, most widely accepted, cleanest, most dependable, cheapest to buy, cheapest to operate, heating equipment ever known. There is less maintenance on this equipment than on any other type of heating and there is certainly at least as high a level of comfort provided by it as with any other known system. With such a long head start it would appear that all we need to do is to combine an equally strong gas powered air conditioning system with our heating equipment and back it with vigorous sales promotion in order to maintain our complete leadership in this field. Certainly every effort is being made in this direction by several leaders in the gas heating business.

Servel has long led the fight to provide an air conditioning load for the gas industry and their efforts should become even more effective as other manufacturers enter the field. There are now at least three gas motor air conditioning systems available and to my knowledge six recognized leaders in the gas heating industry are hard at work to develop other systems of gas powered air conditioning. Still more are probably in the offing.

On top of all this the AGA is pursuing research on several possible air conditioning cycles, including the field of gas powered heat pumps. I wish I had the knowledge to bring you full reports on all of this activity in the gas air conditioning field; however, I shall have to limit myself to what my own company is doing in this report.

Perhaps it would be best to start with a brief report on the various cycles which we have in research stages. As most of you know we are studying four cycles in addition to the internal combustion gas motor. Very frankly only two of these cycles are progressing as rapidly as we would like to see them do. At the Arthur D. Little Co. Inc., Cambridge, Mass., where we are studying the binary jet system. We have as yet been unable to obtain the efficiencies which are desirable in this particular system. Research is still going forward, however, because a successful solution to the problems encountered would provide the industry with a most compact piece of equipment employing only one moving part. This you will recall is the gas cycle which might make possible a gas powered window unit in addition to a central unit of larger capacities.

Down at Kingsville, Texas, the Texas College of Arts & Industries has encountered certain technological problems in the absorption cycle. It seems advisable that we discon-

Four hundred and seventeen gas engineers and service men have been trained in installation and service of the Coleman gas motor air conditioning unit at seven regional training schools like that shown above.

tinue this phase of our research program, at least for the time being, in order to concentrate effort on other projects which hold greater promise for early development.

The two cycles which are showing more research progress than the others are the external combustion gas motor and the open type absorption cycle. In the external combustion motor system heat applied externally through a gas flame expands a sealed-in gas to move a piston and thereby operate a mechanical compressor. Certain aspects of this project indicate the possibility of a rather high efficiency combined with a first cost that might more closely approach the competitive price of most electric units.

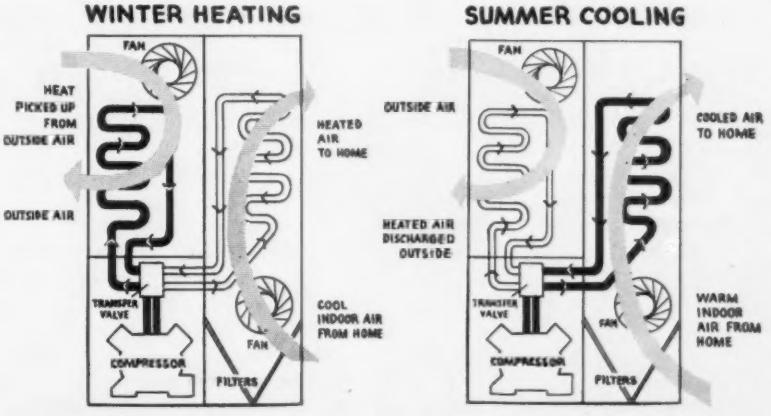
At the Institute of Gas Technology, Chicago, encouraging progress has been made with the open type absorption system. This system would operate under atmospheric pressure and its production cost would probably make it very competitive with the better types of electric air conditioning equipment. Among the several advantages of the open-type absorption cycle is a high degree of humidity control. It is possible that this system could even provide independent humidity control.

Summarizing the research projects under way, I think we can safely make three major points. One, a marketable unit of any one of these cycles is a minimum of three years away because of the necessary field experimental work and laboratory product development that is an essential part of bringing such a unit to the market. Two, any of these cycles would have a first cost below that of a gas motor unit and at least two of them show promise of a manufacturing cost which would permit a selling price that might be below the price of most equivalent electric air conditioning. Three, the internal combustion gas motor air conditioning system remains the one which has the lowest operating cost of any known system. Thus, while we may gain in compactness and first cost, we will lose some of the advantage we have at present in operating cost on the internal combustion gas motor system.

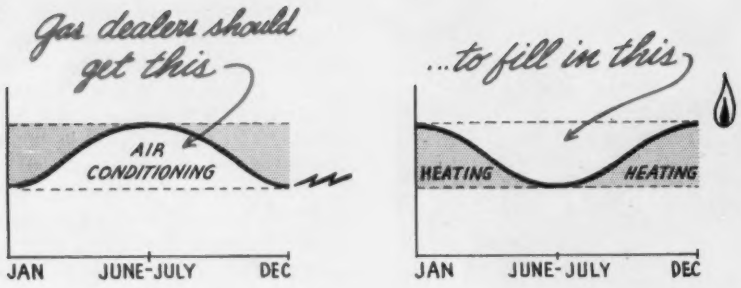
Now, a word about gas heat pumps. Coleman Co. engineers have examined this field most carefully and at present it does not appear that any advantage would accrue to the gas industry through the use of a gas heat pump. I might point out in passing that most any air conditioning cycle can be developed into a heat pump to provide heating as well as cooling. Part of the AGA research funds, I understand, are being devoted to the possibilities of a good gas heat pump. We at Coleman have by no means abandoned the thought of a gas heat pump and should such an appliance appear to be needed by the gas industry be assured that the Coleman Co. will stand ready to provide it. Should that day come it is probable that the gas industry would find it most advantageous to develop a modified heat pump; one in which the coefficient of performance would probably be 1.0 and in which stack heat would be recovered for the heating cycle to provide the higher efficiency rather than any attempt to use an extraneous heat source.

But, while it is always nice to look into the future to see what we have and what our competition may have, certainly our prime interest is in selling what we have right now.

In this field I am an authority only on the Coleman gas motor system. Following more than two years of field testing and product development and subsequent to favorable reports from the utility engineers, who participated in our field testing, we began limited production of the gas motor system in 3-ton and 5-ton sizes early this year. As of this moment



Schematic diagram of the electrical industry's heat pump which offers all-electric year-round air conditioning.



there are a few hundred units either already installed or very shortly to be installed. These units are scattered throughout the country and there are installations in 41 of the 48 states and one of the provinces of Canada. All units this year were placed on an allocation basis and all units are under the control of the gas companies in whose areas they are, either directly or indirectly.

Every company that took a unit this year agreed to send at least one man to a three-day regional school where thorough instruction was given in installation and maintenance. We have found that the entire industry is in complete agreement with our company's thinking, that thorough training is an essential to the success of the introduction of this relatively new equipment.

Seven schools were conducted across the nation, the final having concluded just recently at Des Moines, Iowa. We had a total attendance at these schools of 417 people. Each man attending the school was provided with a very complete installation and service manual which also covers application of the equipment to almost any situation. Included in the manual is the first formula ever presented to enable the user to determine the ability of any existing furnace blower and warm air distribution system to handle the required air conditioning load. This development is particularly timely in view of the emphasis which Operation Home Improvement places upon home modernization.

We made available to all those attending the schools all of the teaching aids used so that each man trained is a potential trainer. We will conduct a second series of schools early in 1957 and we anticipate that at the conclusion of those schools there will be 2000 to 3000 men in our industry who are completely capable of handling application, installation and maintenance of this equipment. I think you will agree that this provides a strong nucleus upon which we can develop in the future.

While I am discussing maintenance, I would like to tell you about the 1955 field test unit that has seen the most service. This unit was installed in Tulsa by the Oklahoma Natural Gas Co. Mr. Merle Orelup, general air conditioning engineer of ONG, has given this unit an accelerated test. The results speak for themselves:

Total hours of operation (to April 21, 1956)	5,500
Gas consumption — 415.5 MCF @ 50 cents per 1000	$207.50
Lubricating oil — 16.4 gal. @ 75 cents per gal.	12.30
Water consumption — 60,000 gal. @ 45 cents per 1000	27.00
Electricity —1100 KWH @ 2.3 cents per KWH	25.30*
Total operating cost — 5500 hrs	$272.10
Cost per 1000 hrs	$ 49.47
Cost per ton hr	$ 00.0165

*Electricity for furnace blower not included.

Notwithstanding that this was a field test unit from which information was being gathered to enable our engineers to make further improvements, only a reasonable amount of maintenance and service were required. Due to faulty bearings, it was necessary to replace two small electric motors. We now have a very dependable motor. The same was true of spark plugs and ignition points. The second set of plugs resulting from recent engineering advances are functioning perfectly after 3500 hrs.

The oil in the Tulsa test unit was changed after 2000 hrs. The present oil is in good condition after 3500 hrs indicating it will not be necessary to change oil oftener than once each season.

Intake manifold and engine compression readings show that the motor, to use Mr. Orelup's words, is "as good as new."

To summarize, Mr. Orelup says: "It may be concluded that our experience with the 1955 field test model has been satisfactory through 5500 hrs of operation."

Now, a word about 1957. Our production for next year will be in the thousands and we believe we will be in a position to meet the demands of the industry regardless of what they may be. As I've already said, we will conduct further training schools and and we also will have a strong program of advertising and sales promotion. This latter program is already well past the planning stages and you will begin to see some of the early parts of the program this fall.

Because of our experience with the relatively small amount of publicity which has already been released we were afraid to do any amount of sales promotion prior to the end of the current cooling season. Even a minor trade paper item in the past year has resulted in a flood of consumer inquiries to which no satisfactory answer has been possible up until the present. You may be certain that such inquiries will be most welcome in the future.

And, in the future, how do we sell this gas air conditioning equipment? It appears to us that most gas companies are going to want to sell and install themselves. Many have told me, however, that they feel we can never achieve the volume they and we want until we make this equipment available through distributors and dealers.

Just how quickly we can move in that direction depends primarily on these factors. One, the desire to have distributors and dealers handling this equipment. Two, the ability to find the necessary manhours to train dealers. Three, the demand for such equipment that can be stimulated in each territory. Throughout the southern territory, which is of course the prime air conditioning market of the United States today, we are currently experiencing a strong demand from our distributors and dealers to have this equipment made available to them. Whether this is a demand that will wear off with the first blush or will increase in intensity is very largely dependent upon the gas companies' attitude and actions.

Already at the request of some gas

companies we have brought a few distributors and a few dealers into the picture. Of course this action was essential in Oklahoma where the utilities are prohibited by law from merchandising. In other instances our dealers and distributors have entered the picture at the insistence of utilities in their areas who felt that more could be accomplished by having the dealer handle sales and installations and by having the utility devote the major part of its attention to the promotion of the equipment.

We plan to remain completely flexible so that the course of action which appears wisest in each territory can be followed. It does seem obvious, however, that anyone handling this equipment, be it utility, L. P. gas dealer, distributor, or appliance dealer, must necessarily be equipped to handle heating and duct work, particularly on new construction.

The subject of new construction brings me to a point I think worth making. Thus far it has appeared to most of us that our greatest market would be in existing homes and that our only chance in new construction would lie with the owner-built home. A little analysis, however, would indicate that there is every chance of selling this kind of gas air conditioning to the speculative builder. Let me give you a few examples:

I have based these figures on an operating season of 1400 hrs which is certainly conservative for a large part of the southern area. I have used two cent electricity for electric operating costs and 55 cent gas, which is the low step of the Lone Star Gas Co., Dallas, as the operating cost for the gas motor unit. This provides a yearly difference in operating cost between gas and electricity of $112.40 savings. Now let us suppose that the gas motor installation costs as much as $750 more than the equivalent electric air conditioning installation. On a regular FHA 20-year mortgage the annual cost of financing this additional $750 would be $58.50. This still leaves us $53.90 of our operating cost savings, a difference which would amount to $1078 in 20 years. Thus over the life of the mortgage the owner has not only paid the additional cost of the installation out of savings but on top of that has saved more than $1000. Should you have 55 cent gas and be up against 2½ cent electricity, the 20-year savings for the gas job would amount to $2086.

Such dramatic savings can have an important effect on whether gas or electricity obtains the air conditioning load in the smaller homes built for wage earners who have to qualify with a minimum income for FHA and VA approvals.

Let's see what else we have to offer the speculative builder. First, we need no additional space inside the home. The builder can plan a heating installation with a closet type furnace with zero clearance and the cooling coil with it right in the bonnet of the furnace. His only additional expense is the pouring of a concrete slab outside the home and this is considerably cheaper than the cubic footage he would have to allow inside the home for most electric air conditioners.

Two, less expensive wiring. He need wire the house only for 110 volt electricity in order to provide air conditioning with the gas motor rather than the 220 volts needed for most electric air conditioning. This is one more spot where gas air conditioning supports the other domestic appliances by keeping out a three-wire service. To operate the gas-motor air conditioner he needs no greater gas supply line than the one which will already exist for the heating season.

For the owner of the existing home all of these advantages apply plus the very dramatic operating cost savings enjoyed with this equipment.

But, the gas companies say, wouldn't it be wonderful if we could be even more competitive in first cost than we are at present. I agree completely and I have some news which is most encouraging along these lines. We have designed our gas motor air conditioning system to operate with the chilled liquid principle.

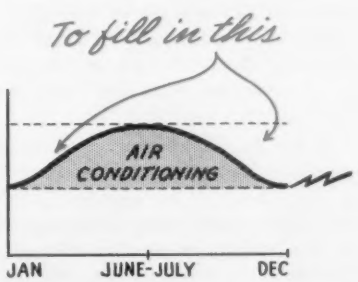
This provides the utmost flexibility in installation and application. Furthermore, it permits inexpensive installation without the employment of highly skilled refrigeration engineers. The good news about this system is that we are finding methods of reducing manufacturing costs on this type of equipment.

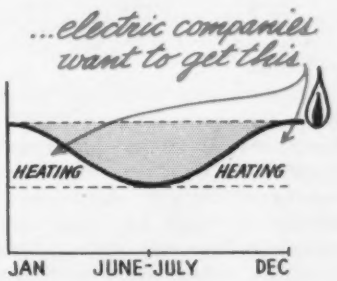
In addition to the chilled liquid system we are now pushing ahead with work on a direct expansion model of the gas motor unit and I am confident we will have both systems on the market in 1957. Direct expansion will, of course, be somewhat lower in first cost and will appeal to those companies who have in their employ capable refrigeration engineers.

If we all find the right answers there is big business ahead for us and mighty profitable business in a summer load at residential rates.

And let us not forget that we have two objectives ahead. One, eventually we shall be holding our heating load by the addition of summer gas air conditioning. This will give us an opportunity to dramatize the substantial difference in operating cost for both heating and air conditioning and perhaps we can reflect some of this story on the range and the water heater so that the current trend may be reversed in those fields.

Our second objective, of course, is to conduct a strong offensive to build the profitable gas summer load through gas powered air conditioning. I sincerely hope that five years from today I can read something like this, "Now in 1961 the gas industry has more than half the total air conditioning load in the country. The dramatic rise of gas powered air conditioning began in the summer of 1956 when the gas industry united in an aggressive attack on the air conditioning load." Yes, those are the words I am looking forward to in 1961. ■





Rx safe heating installations

apply rules locally through each day

By ROBERT J. SIPCHEN
Field Editor

Nearly every step in making a safe heating installation is covered in NFPA Pamphlets 52 and 58, and in local codes. Most LPG accidents on customers' premises happen because somebody ignored or forgot the rules. How to keep service and installation men more constantly conscious of the necessity for complying with every rule is the subject of this article.

ARE you promoting a competitive fuel? If someone asked you that question you would probably think "I hope his nurse finds him before he becomes violent." Yet, every time your company has an accident, every time your fuel receives unfavorable publicity as the result of an accident at a customer's home, you are promoting some other fuel. There are always several other fuels available for heating and air-conditioning.

No one ever wants to create an accident. Most of them happen because of oversights or shortcuts. These can be avoided, but it is a never-ending struggle. Every growing industry is daily becoming more aware of the importance of safety. Just as one sales meeting will not stimulate sales for evermore, so one short safety campaign cannot create a permanent safety consciousness among employees.

One way to imprint the importance of safety on a man's mind is to illustrate what the lack of it can do. An accident can be very costly in anguish and suffering as well as money. An accident may generate the spark of interest that will prevent repetitions, at least for a while, but it is a negative approach to the problem. Safety meetings can accomlish better results. They cost a fraction of the money and none of the anguish and suffering.

The formula for safety is very similar to the successful procedure followed by Alcoholics Anonymous. They plan to make permanent cures, but the reforming drunkard does not attempt to make any long range vows. He lives one day at a time, promising himself every morning to live through that day without taking a drink. Similarly, each of us can pledge ourselves that nothing we do today can cause or contribute to an accident.

To accomplish this, we must understand not only the properties and characteristics of L. P. gas, appliances and equipment, but we must know how to put the fuel and appliances together so their operation will be safe. We must know and follow safety laws prescribed for and by our industry. The law does not accept ignorance as an excuse.

The Service Man's Role

Many states have adopted NFPA pamphlet 58 as law. Others have based their regulations and laws upon it. County and municipal codes are generally expanded to include the material in NFPA pamphlet 52. Every person installing or servicing LPG equipment and appliances should be familiar with all of the codes which apply in his locality.

Generally speaking, all equipment for containing gas and supplying it to the consuming device should be of a type examined, tested, and listed by the Underwriters Laboratory Inc. Appliances should be approved for L. P. gas by the AGA and bear the AGA label.

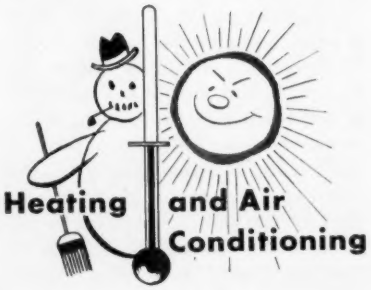
Though a perfectly foolproof safety formula has yet to be discovered, there are basically only two things necessary for a man to make a safe heating installation:

1. He must be properly trained and qualified. That is, he must have a thorough knowledge of the safety codes and regulations which apply to each installation along with the technical know-how to actually make the installation.

2. He must conscientiously apply this knowledge to every installation.

For example, an elderly couple who were almost asphyxiated arrived at the hospital in time to be saved, thanks to the quick thinking of their 5 a.m. milkman. How did it happen? It was the first cold fall night, a night when an L. P. gas heating unit would ordinarily be proving its worth. The heater was on, the thermostat set, and the people retired in comfort.

The man who hooked up the job recalled that the couple were new customers who brought their own space heater into the home when they moved in. The venting was done by a friend of theirs, so all the L. P. gas man had to do was run the gas line and check out the system. Did he check the vent to make sure it was functioning properly? No. He had always thoroughly checked every job before this, but since he had never previously found anything wrong, he assumed that this job too would be all right. The vent pipe ran up through the ceiling. Also, it was getting close to quitting time and he had to make a range burner adjustment before reporting back to the office. He did not know that the friend hadn't finished running the vent



through the roof. It terminated in the space between the ceiling and the roof.

Now, could this serviceman have been expected to spend an extra 15 minutes going to the trouble of climbing into the attic or onto the roof to check a vent pipe when he had no reason to doubt its safety? Those 15 minutes might have cost several lives. However, the fault did not lie solely with the serviceman. In this case his manager was partly responsible.

The proper fulfillment of the serviceman's responsibilities creates a two-fold responsibility for management. It is management's task to see that employees are completely schooled in what is to be done, how it is to be done, and why it is to be done. Management's second job is to make sure employees are allowed sufficient time to do their work in the most conscientious manner.

Servicemen from ever part of the country agree on the cause of substandard work by men who know their jobs. When completion of a certain number of jobs is expected, the amount of work done can be seen on the daily report but the quality is rarely seen by management. Working under the pressure of having to complete a certain number of installations a day is not conducive to thorough adherence to all safety practices. The amount of time required for a job should be left to the employee's judgement. If he is not capable of performing his tasks safely and yet speedily enough to satisfy his employer, either he must be replaced or his employer must revise his ideas. If it is a question of speed or safety, safety is the most profitable choice.

Preliminary survey

Normally, a heating installation requires a preliminary survey of the customer's home and property. This is the time for the contact man and the customer to reach a mutually satisfactory decision as to the tank location. If the customer's choice of location is not in compliance with the required distances from the buildings and adjoining property, the provisions of the code should be made clear. If this point is made clear at the time of the sale, the contact man is in a position to influence the customer's decision. If not, the installation man may be faced with the task of changing an already-formed opinion.

The preliminary survey is also the logical time to bring up any points which are necessary for a safe installation to which the homeowner or resident might take exception. The customer may object to the precedure necessary for venting a heating unit. He may not want to put a hole through the roof, or he may object to an exposed vent pipe up the side

It's not enough for the serviceman to tell the customer where to turn off the gas—he should show her.

of the house. He may prefer not to alter a utility room door in order to provide adequate air for combustion. Whatever his objections, they can usually be overcome by explaining that those provisions are necessary for the most efficient operation. If the customer is willing to sacrifice efficiency to eliminate some personal objection, he might be accomodated. You cannot, however, compromise with safety or the law.

Safe installation

Bulk tank locations should be determined with respect to nearest important building, group of buildings, or line of adjoining property on which buildings might later be erected in accordance with *Table 1*.

Two points which must not be overlooked are:

1. The container should be located where it will not be subject to any physical damage.

2. Weeds, long dry grass or any other readily ignitable material shall not be allowed within 10 ft of the tank.

Common sense dictates that accessability for filling and servicing plus approval by the customer are also requisites in determining the container location.

The tank must be supported by a "substantial masonry foundation" and it must be level. The level requirement is not only for the sake of appearance, but more important so that the liquid gauging devices will register accurately. If the gauge does not correctly indicate the liquid level, it is conceivable that the hazards of overfilling might develop.

An important point to remember throughout all of the rules and regulaticns accepted by the industry, is that in some cases the rules may seem to be of little consequence, especially from a safety standpoint. However, each of these rules is the result of very thorough thinking on the part of some of the LPG industry's top men. There is a definite reason for each rule. The fact that a particular rule does not seem to make sense does not justify failure to comply with that rule. It does indicate that some research on the part of the skeptic is necessary to determine for himself why the rule is important.

For example, the rule that "piping shall be of such size and so installed as to provide a supply of gas sufficient to meet the maximum demand without undue loss of pressure between the source and the appli-

TABLE 1. MINIMUM DISTANCES FOR INSTALLATION OF L. P. GAS BULK TANKS
(NFPA Pamphlet No. 58, Rule B.5.[b])

	Minimum Distances—Feet		
	Containers		
Water Capacity/Container	Underground	Aboveground	Between Aboveground Containers
Less than 125 gal.	10	None	None
125 to 500 gal.	10	10	3
501 to 2000 gal.	25	25	3
Over 2000 gal.	50	50	5

TABLE 2. MINIMUM CLEARANCES FOR LISTED GAS-FIRED ROOM HEATERS
(NFPA Pamphlet No. 52, Table 3)

Type	Distance from Combustible Construction—Inches	
	Jacket, Sides and Rear	Projecting Flue Box or Draft Hood
Warm air circulators	6	2
Radiant heaters	6	2
Wall heaters	Flush	—
Gas, steam and hot water heaters	6	2

TABLE 3. MINIMUM CLEARANCES FOR LISTED CENTRAL HEATING BOILERS, FURNACES
(NFPA Pamphlet No. 52, Table 4)

Type of Appliance	Distance from Combustible Construction—Inches			
	Above	Jacket, Sides and Rear	Front	Projecting Box or Draft Hood
Boilers	6	6	18	6
Furnaces	18*	6	18	6

*A verticle clearance of 6 in. may be used with warm air furnaces equipped with mechanical means to circulate the air and with an approved temperature limit control that cannot be set higher than 250° F.

ance or appliances" assumes a new importance when consideration is given to the possible effects of pressure loss. What might happen if one appliance, say a range oven burner, is on minimum flame and the pressure to the range dropped enough to extinguish the oven pilot and minimum flame? Such a situation would be possible if for example the furnace and clothes dryer thermostats both called for heat at the same time and the lines were undersized.

A manual main shutoff valve ahead of controls on a furnace is a necessity. It was worth its weight in gold to one serviceman who created a leak at one of the controls by turning a fitting too tight. If not for the main shutoff valve, he would have been forced to try to hold back the leak until someone came to assist him. If he attempted to reach the main houseline valve outside, the escaping gas would undoubtedly have reached a source of ignition before he could close down the line.

Regardless of who installs the heating unit, the serviceman should check the following points before connecting the gas line to the furnace:

1. The furnace should be approved for use with L. P. gas and bear a label to this effect.

2. The furnace should be equipped with the proper controls for LPG.

3. The controls should be in correct sequence.

4. The orifices should be properly sized.

5. Vent pipe should be of the right type and size and should be installed correctly.

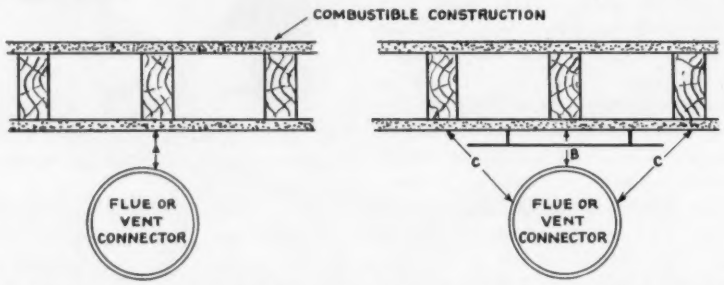
For natural, manufactured, or mixed gases, a pressure regulator is generally provided at the furnace. With L. P. gases, this is not normally necessary as single stage or two stage regulation outside the house controls the line pressure to all appliances.

LPG line pressure is 10 in. to 12 in. w.c. and line pressure for other gases is considerably lower. Make sure that all control valves have been tested at a pressure suitable for L. P. gas. With some gases, leather diaphragms, seats, and gaskets are used. Leather, however, is not resistant to the chemical action of L. P. gas. A more suitable material must therefore be used in L. P. gas controls. These are some of the reasons for making sure that the controls are approved for L. P. gas.

The correct sequence of controls depends to a great extent on the type of heating system which is used. In most cases there should be a manual main shut-off valve in the line before it enters the furnace. A union following this valve is required and facilitates the removal of controls or the complete heating unit without necessitating a shutdown of other appliances.

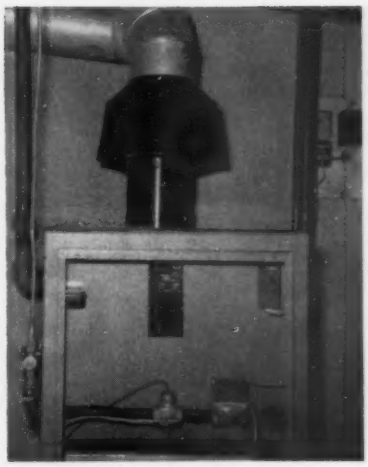
A 100 per cent safety pilot shutoff valve should be next in line. The safety valve is not 100 per cent safe unless the pilot flame outage stops the flow of gas to the pilot as well as to the main burner. Next in line there is usually the valve controlled by the thermostat. If the 100 per cent safety shutoff valve is not of the safe lighting type—one that prevents passage of gas through the valve to the main burner during the pilot lighting operation—a second manual shut-off valve should be in the line immediately following the safety valve. A nonsafe-lighting type of valve can permit large quantities of gas to enter the combustion chamber during the lighting operation if the thermostatically controlled valve is open. This occurrence could precipitate serious personal injury. Another disadvantage of a nonsafe-lighting valve is that it can be tied or propped open. This would permit gas flow to the main burner even if the pilot light were out.

The proper operation of the 100 per cent safety pilot is vital. Two simple tests can indicate whether it is functioning as intended. One is to turn off the gas supply to the pilot and note the time required for the main burner to be extinguished. No longer than three minutes should elapse. The other test is to turn down the pilot flame as low as it will go and yet hold the valve open. With the pilot flame in this position, the gas to the main burner should ignite immediately from the pilot.



Left figure shows distance of vent from combustible construction with no protection. The distance A is set forth in NFPA No. 52, Table 5. Right figure shows construction with protection, with B equalling the reduced clearance of NFPA No. 52, Table 6. Protection must extend far enough to make C equal to A.

In many cases, someone other than the gas dealer, usually a heating contracter, installs the heating unit. When this is the case, and the dealer installs the tank and regulating equipment and runs the line, his responsibility extends beyond the run of pipe. If the unit is not completely in accordance with the rules for LPG use and ready for operation, the gas line should not be connected. Any deviations from safe practices should be brought to the installers attention for him to correct. Under no circumstances should a gas line be connected to an appliance which is not 100 per cent safe.



Vented appliances should be equipped with draft collars and horizontal runs should slope up to the vertical flue.

Location and venting

Location of the heater is an important consideration. Several factors must be contended with in choosing a suitable location, but all are dictated by the type of heater to be installed.

One of the big advantages of heating with L. P. gas is the great number of different units available. This makes it possible to install an effective unit for every need, but also makes it impractical to discuss each type separately in an article of this nature.

After the type of heater — wall, floor, recessed, central, etc.—has narrowed the choice of location, the other factors can be considered. These include clearance from combustible construction *(see Tables 2 and 3)*, accessability for service, supply of air for combustion and circulation, and existing supply lines and venting facilities.

If new house construction is contemplated or in process, piping, venting and unit location should be discussed with the contractor. For instance, a few words to the contractor to provide a passage for pipe through a concrete wall can accomplish neater results than several hours of pounding on a star drill.

An explosion hazard is created if unburned gases escape. A poisoning hazard from carbon monoxide exists when the products of incomplete combustion from any fuel are released. These are two of the reasons that make venting necessary. In general, each appliance that is provided with a flue collar or draft diverter should be vented, and a draft diverter should be incorporated in the vent of each appliance. The best location for a heating unit so far as venting is concerned is where the vent pipe can be run straight upward from the draft diverter. If lateral runs are necessary, they should slope upward as steeply as possible.

In venting a heating unit as in selecting a unit's location, certain clearances from combustible construction must be maintained. For flue or vent connector clearances of listed appliances, refer to *Table 4*. These clearances may be reduced as specified in table VI in NFPA Pamphlet No. 52 when certain protective material is used. The proper steps necessary to make a good venting installation are treated very thoroughly in the Vent Installation Handbook published by the Metalbestos division of the William Wallace Co., Belmont, Calif.

An improperly vented appliance can be more dangerous than an unvented appliance. Don't overlook the draft diverter. If you do, it is improperly vented. There is nothing complicated about the construction of a draft diverter, but it serves many important functions, three of which are:

1. It permits the removal of the products of combustion from the combustion chamber during the brief period when a draft is being created in the flue.

2. It prevents a down draft from entering the combustion chamber and adversely affecting the combustion process and possibly extinguishing the pilot light.

3. It allows room air to satisfy excessive draft demands.

The draft diverter has been carefully designed. Any alteration in its construction, such as cutting down its height to permit installation of an appliance in a confined area, would tend to defeat its purpose. This would also be true if it were installed in any position or location other than that recommended by the manufacturer.

Testing

A test of the complete system is necessary before allowing any gas to enter the lines. The piping from the regulator at the tank to the heating unit should be tested first. Although the pressure used in this test is dependent on state regulations, many authorities believe a minimum pressure of 10 lb should be used even though a lower pressure is permissable in certain states. The suggested equipment for this test consists of a tire pump, tire pump hose to pipe adapter, shut off valve, and pressure gauge. For easy reading and quick detection of leaks, the gauge should have a range of only a few pounds more than the test pressure. For all practical purposes, a leak of one lb is ten times easier to detect on a

TABLE 4. FLUE OR VENT CONNECTOR CLEARANCES FOR LISTED APPLIANCES
(NFPA Pamphlet No. 52, Table 5)

Appliance	Minimum Distance from Combustible Construction—Inches	
	Metal Flue or Vent Connectors	Type B Flue or Vent Connectors
Boiler	6	1*
Warm air furnace	6	1*
Water heater	6	1*
Space heater	6	1*
Floor furnace	9	3**
Incinerator	18	Not permitted

*Except as otherwise specified in the listing by a nationally recognized agency.
**Three in. for a distance of not less than 3 ft from outlet of the draft hood. Beyond 3 ft, the minimum clearance is 1 in.
Clearance from metal flue or vent connectors to combustible construction may be reduced as specified in NFPA No. 52, Table 6, where combustible construction is protected in accordance with that table.

0-20 lb gauge than it is on an 0-200 lb gauge, assuming that the gauges are of the same diameter and graduated over the same arc.

The testing equipment should be tied into the line from the pipe outlet in the following order: pressure gauge, shut-off valve, adapter and tire pump. All other line outlets should be capped or plugged. After the line has been pumped to the desired pressure and the shut-off valve closed, time should be allowed for the pressure to stabilize. This is recommended because pressure fluctuations sometimes occur as the air temperature is affected by pipe temperature causing expansion or contraction of the air and resulting pressure changes. This fact also makes too long a test period, such as overnight, undesirable, because atmospheric temperature changes may cause the pressure to fluctuate. A test time of no less than ten minutes is satisfactory, but 30 minutes is preferable. If a pressure drop occurs, soapsuds should be used to locate the leak. The necessary repairs should be made and the test should be repeated until the gauge pressure remains stable.

The furnace control valves are designed for a lower pressure than that used in testing the line. To prevent possible damage to these valves, a separate test must be made to determine whether the unit itself is leak free. The piping should be connected to the unit and to the pressure regulator outlet at the gas container. A test gauge adapter should be installed between the house line valve and the regulator inlet. All appliance valves should be closed and then the house line valve opened, allowing container pressure to register on the gauge. The container valve must then be closed and a few minutes allowed for the pressure to stabilize.

Pipe joints are tested for leaks with soapsuds and special compound — never with a match or other ignition device.

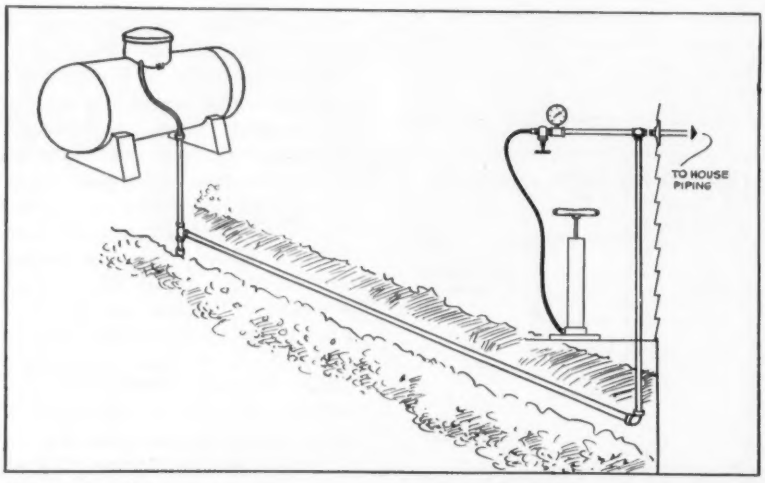
If the gauge indicates that there is a leak, it will either be in the unit or in the line from the house line valve to the regulator outlet. Again soapsuds should be used to determine the location of the leak, the condition should be corrected, and the test repeated until the results prove satisfactory.

Before leaving the job, it is a good policy to check the heating system through one complete operating cycle. This will disclose whether all of the controls are functioning as intended. The job has not been completed until the customer has been thoroughly instructed in all points necessary for the continued safe and efficient use of the complete system. This last step should be repeated in the event a new owner or tenant moves into the building.

Throughout the entire job of putting in a heating system, possibly the best advice that can be given is to follow the manufacturer's instructions. In case any difficulties are encountered in any phase of the work, the manufacturer of the particular equipment involved should be contacted for advice. The manufacturer or his representative is as close as the nearest phone and many heating installation difficulties and service problems have been solved for the price of a phone call.

When installing heating equipment, or any other equipment or appliance, safety must always come first. This is true regardless of the fuel to be used. L. P. gas, in spite of some bad early publicity, has proven that it can be one of the safest of the fuels available. Exactly how safe it actually is depends on the human element. L. P. gas, like an automobile, is as safe as the person who handles it. As with driving, safety in gas installations can be increased a hundred fold by following a few well defined rules, some of which have been included here.

No one benefits more from safe practices in the use of L. P. gas than does the L. P. gas dealer. No one has more control over the fuel than does the L. P. gas dealer. It makes common sense that safety *first* has never had a clearer meaning. ■



All piping should be tested under air pressure before turning on the fuel. Air pressure should be higher than operating pressure.

It's easy for a customer to want an all-year air conditioning system for his home but it may not be so easy for him to lay out the necessary cash to buy it. Here are eight ways the purchase might be financed without undue hardship on customer or dealer.

Financing the customer

By MARTIN A. BROWER

No matter how much a prospective customer is sold on the advantages of equipping his home with an all-year air conditioning system, if he doesn't have the money necessary for the purchase of such a unit, his desires may have to be packed away with his other dreams and the dealer rings up a "no sale" on him as an immediate prospect.

A dealer interested in promoting such sales must therefore be equipped not only to sell the prospect on the benfits of buying an all-year system but also to show the prospect how he can finance the purchase.

Few homeowners can readily afford to write a check for the $1300 to $2100 cost of a year-around air conditioning system. Except for those who can easily come up with that amount of ready cash, the answer is to finance the purchase over a period of time. But how many of these installations can a dealer finance? If he sells only 10 average units, it could tie up $17,000 for a long period of time.

Installment contract

For the dealer who has sufficient working capital to carry sizable long-term accounts, the interest can provide a nice return in itself. The dealer who carries even the above $17,000 for two years at six percent can earn $2040.

Along with the carrying of contracts, however, comes the resultant collection and bookkeeping headaches, the tying up of large sums of money for long periods, and the risk of non-payment. No dealer is eager

to repossess an already-installed heating and air conditioning system.

The most convincing argument against a dealer carrying his own paper is that an L. P. gas dealer is in the business of selling gas and appliances and not in the business of lending money. The six percent interest derived from carrying the paper could be made many times over during the year if the money is invested in developing new business instead of in customer credit.

A frequent practice is for a dealer to write an installment payment contract with a customer and then to "rediscount" or sell the contract to a bank, savings association, or finance company. In such a transaction, the dealer acts as the middle man between the customer and the credit agency. The dealer gets immediate and full payment from the financial institution and the customer is then indebted to that institution which takes over title on the equipment sold.

Since the dealer is the middleman in this transaction, it is to his benefit to be certain that he sells the customer's contract to a reliable organization which will deal fairly with the customer. Should the customer believe he is being treated unfairly by the financial institution, he might be prone to hold the dealer responsible. A letter regarding an overdue received from the financial institution which the customer feels is "nasty," might mean a lost customer for the L. P. gas dealer. The wise dealer will select a financing institution with a reputation for courteous and friendly treatment of customers.

The terms which a dealer is able to arrange for a customer by discounting his contract might not be suitable for an item running into the higher price ranges. The monthly payments are frequently of greater concern to a homeowner than is the total price or the cost of the installment contract. If payments cannot be stretched out over a long period or if interest is particularly high, the cost-per-month may be out of the prospective customer's reach. Once a prospect desires an item, the fact that it is only a few dollars each month might clinch the sale more easily than quoting a high total price and certain more easily than quoting a high monthly payment.

For the above reasons it is to the

The federal government insures both Title I and Veteran's Administration loans.

dealer's advantage to be familiar with the low cost home improvement loans available to homeowners. These loans have the advantage of providing the customer with a sum of money with easy payment and at the same time keeping the dealer completely out of the lending or installment payment picture. The customer arranges by himself, or with limited dealer help, to make a home improvement loan and the dealer gets the full sum in cash from the customer or in some cases directly from the lending institution.

In general, there are seven types of loans available for home improvements. These are presented below.

Title I loan

Home improvement loans made by qualified lending agencies may be insured by the Federal government through the Federal Housing Administration under Title I of the National Housing Act of 1934. Loans made in this way are therefore referred to as Title I loans.

These loans can be used for most basic home improvements but cannot be had for items considered nonessential to a home, such as a swimming pool or an outdoor barbeque or for appliances and items such as

Open-end mortgages can be added to without re-writing or making a separate loan.

furniture that are not substantially built into the property. Under this ruling, therefore, a heating and air conditioning system "which has ducts and is vented to at least two rooms" can be included, since it is built into the property, according to the FHA.

There is a limit of $2500 which can be borrowed for a one-family house and loans are repayable in three years and 32 days. Greater amounts of money and longer repayment periods are allowed for multi-family and farm dwellings. Maximum interest is five percent discount.

Title I loans are limited to old homes or new homes which have been lived in at least six months.

An increase to $3500 for the maximum amount loaned and to five years for the payment period is contemplated in Washington and likely to become law in the near future.

Veterans Administration loan

Part of a veteran's "GI mortgage" can be allocated for home improvement. The Federal government insures this loan just as it does with a Title I loan, but in this case, the insurance is through the Veterans Administration. Like a Title I loan, the government shares the risk with the lending agency, making loans easier to get and resulting in a lower interest rate than a conventional loan. A Veterans Administration loan is especially easy to acquire if the borrower goes to the institution already holding his mortgage.

"Own plan" loan

So-called "own plan" loans are offered by many commercial banks, savings and loan associations and trust companies throughout the nation. Such loans serve the same purpose and are similar to a Title I loan but are not insured and so need not be approved by any governmental agency. Terms and allowances are therefore more liberal. Some institutions have adopted this type of loan to avoid the "red tape" involved in a Title I loan.

One large banking institution in California, for example, has such a plan with a maximum of $2500 and three years to pay. Under this plan, a customer could borrow $1600 for a typical year-around air conditioning system and with no down payment repay the bank at $51.11 each

month for 36 months. His family could enjoy the benefits of year-around air conditioning for only $1.65 per day. Total interest charge on the loan is $239.96 or five percent per year.

Conventional loan

A conventional property improvement loan is not insured nor is security required and therefore not all types of institutions can offer such a loan. It is unrestricted in its application, and the maximum amount, like other loans, is usually $2500. Also like the other loans, the maximum repayment period is three years, although some states allow up to five years.

Open-end mortgage

All loans mentioned so far are relatively short-term and high in interest as compared to most mortgage financing. Repayment may be spread over a much longer period with a new type of mortgage financing which has developed since World War II.

After a cerain period of regular payment of an open-end house mortgage (usually three months), it is possible to obtain cash by adding to the same mortgage without re-writing or making a separate loan. The addition is made at the same interest as the regular mortgage. Monthly payments might be increased slightly to take up the added amount, or the time period can be extended. The latter is usually the case.

In this way, home improvements can be had by the homeowner, yet he pays no more per month than he has been paying.

There are no delays in making such a loan and, in most states, no extra fee is involved in adding to the mortgage. Most savings and loan associations and some banks offer these loans.

In order to take advantage of an open-end mortgage loan, the open-end provision must usually have been written into the original mortgage. One source estimates, however, that approximately 70 percent of the mortgages presently being written have an open-end provision included.

Requirements for and restrictions on this type of financing vary from state to state.

Financing... Credit, when wisely used, is socially acceptable in this day and age

Re-written mortgage

In the event that an open-end loan is not available for any reason, a re-written mortgage or supplemental loan might be used.

Most lending institutions holding a mortgage will — after a period of successful repayment — grant another loan for property improvement. This is actually a second mortgage which might be added to the first mortgage. If the mortgage is re-written, however, certain fees might be charged and have to be considered a part of the cost of the new loan. Interest rates will still be lower, in all probability, than a Title I or other relatively short-term loan.

"Buying on time" allows customers to enjoy a more comfortable home while still paying for it.

Personal loans

Personal loans are made by banks, credit unions and small loan companies but the repayment period is usually much shorter than that of the special home improvement loans. Interest rates will vary with the institution. Two drawbacks to this type of loan are the higher cost and the fact that many states limit the size of the loan to as little as $300, although many states allow up to $2500 and some even more.

Certificate of Completion

Most Title I loans require a Certificate of Completion from the homeowner before any money is made available. Most financial institutions have similar forms for their own loans where Title I is not used. The Certificate must be signed by the homeowner before the money is given by the institution to the individual or the dealer. The homeowner should not sign the certficate until the job is completed to his satisfaction.

Buying on time

To some customer prospects, the idea of "buying on time" might be unacceptable. Several generations ago, most people felt that way. Persons in those days borrowed only when in distress and a man in debt was considered a man lacking in virtue.

This idea, of course, has changed. Our nation could not have developed as it did without credit, both commercial and consumer. More than half of all major appliances and furniture and almost all automobiles have been purchased on the installment plan during recent years.

The idea of enjoying a more comfortable home while you are paying for it is almost universal. Credit, when wisely used, is socially acceptable.

Some families, however, even today cling to the idea that installment buying is something to be shunned. The dealer might point out to such holdouts that there are reasons for buying on credit. A family can have the things they need now and enjoy the benefits as they pay. Through buying on time, savings stay intact for other needs. And saving is often a hardship. It takes time and strict self-discipline to save a large amount of cash for a major purchase. For this reason, buying on credit can be looked on as forced savings.

Home improvement is a good investment. It increases property value while providing the householder with a better home in which to dwell.

Consumer credit for home improvement is available in a variety of forms. The L. P. gas dealer who has the answers on consumer credit plans and who helps the customer contact the proper parties will be ahead when, after he has convinced the prospect that an item such as a year-around air conditioning system is desirable, he is confronted with the question: "But how could I afford to make such a purchase?" ■

RegO 7583 Series

Latest in a complete line of REGO Recessed Relief Valves, it has ¾" NPT inlet and is designed for 250 gallon or smaller ASME LP Gas Containers. Like all the valves in this series, its valve mechanism is so well protected that it can be installed on stationary systems without additional protection. Insist on REGO Recessed Relief Valves... and be sure of LPG safety!

First... Foremost... Finest

meet the latest member of the

REGO®

recessed relief valve family!

No. 3123 (¾" NPT)
For ICC Cylinders Not Requiring Pipe-away.

No. 7540 (1" NPT)
For small ASME or ICC Containers (Tractors, etc.). No Pipe-away.

No. 7541 (1" NPT)
Same as 7540 but with Integral Pipe-away (1" NPT).

No. 7543 (1¼" NPT)
For Larger ASME Motor Fuel Containers (Buses, Trucks, etc.). Hose or Threaded Pipe-away Adapters Available.

No. 7545 (¾" NPT)
Ideal for ICC Cylinders. Used on Lift Trucks, etc. Pipe-away Adapter Available.

No. 7584 (1" NPT)
For ASME Consumer Storage Containers. No Pipe-away.

No. 7585 (1¼" NPT)
For Larger ASME Consumer Storage Containers. No Pipe-away.

No. 3134 (2" NPT)
For Large ASME Distributor Storage Containers and Truck Tanks.

RegO Recessed Relief Valves are available in a complete range of sizes from 2" down to ¾" to meet every requirement. And don't forget that RegO also makes a complete line of non-recessed relief valves. Either way you can't go wrong, because they're all RegO . . . First, Foremost, Finest in LP Gas Equipment.

WRITE TODAY for literature on the complete RegO line. Do it now!

RegO is the registered trade mark of The Bastian-Blessing Company

The BASTIAN-BLESSING Company

4205 West Peterson Avenue • Chicago 30, Illinois

...what goes on?

Are there times when your supplier of LP-Gas is taking business away from you? You can make sure you are buying from a non-competitor by contracting with Sid Richardson Gasoline Co. We have no company-owned or controlled wholesale or retail outlets to compete with you at any time.

We offer you a contract assuring year-around delivery of top-quality product. Why gamble on the supply of the "life blood" of your company?

Let us tell you about our record of delivery and how it can benefit you and your company.

Sid Richardson
GASOLINE CO.

629 FORT WORTH CLUB BUILDING • FORT WORTH, TEXAS

REGIONAL REPRESENTATIVES

H. M. JONES	MARVIN L. DOSS	H. L. SCHMIDLEY	WILLIAM T. CARL	RICHARD L. KLINE
5123 NO. NEW JERSEY	3310 SYCAMORE	885 ST. PAUL AVE.	3105 DEWEY	1027 WEST LOCUST ST.
INDIANAPOLIS, INDIANA	MIDLAND, TEXAS	ST. PAUL, MINNESOTA	OMAHA, NEBRASKA	DAVENPORT, IOWA

Small commercial air conditioning: a dealer's opportunity

By GEORGE KELLEY, Heating and Air Conditioning Sales Manager
Day & Night Division, Carrier Corp.

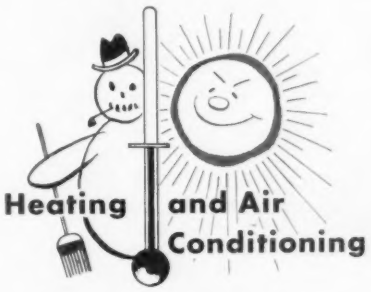
MUCH is being said every day about the tremendous growth the residential air conditioning industry will experience in the coming years. Even more has been said about the L. P. gas dealer's position during this era of expansion and prosperity. It might be time now to examine an often neglected and far more lucrative field—the small commercial air conditioning market.

It is *not* a field without competition nor is it a market without some problems; but for the aggressive dealer who is considering entering this budding industry, it offers an opportunity that cannot be denied. *National* advertising by manufacturers is at last beginning to have *national* effect, and whether your market is metropolitan, suburban or rural, the market for small commercial installations has been softened to the benefits and services of air conditioning and is waiting to be sold.

That there are problems in *this* field, as well as others, cannot be denied. Attacking the market will not be a question of merely "hanging out a shingle." There are some preparatory steps that must be taken which if neglected, will serve to hamper an operation appreciably. The following is written with the intent of providing a guide to the dealer who is considering adding an air conditioning department for work in small commercial installations or a review for those already in the field.

Prior to any other steps it might be wise for the dealer to survey his own market. National growth figures are only statistics to indicate fective they have already been. general trends. Each individual market has its own character. The dealer should step out of his front door and look around him: the bakery across the street, the dress and hat shop around the corner, the drug store on the corner and so on down the street. These local shops represent future prospects, as well as hundreds more in his local area. It won't take a professional market analyst to show what saturation of this market has already been achieved, and the dealer can learn at the same time who his competitors will be and how ef-

Next it is wise for the L. P. gas man to appraise his own capabilities and those of his present organization. He doesn't have to be a graduate refrigeration engineer and his firm doesn't have to have an "AA" rating in Dunn and Bradstreet, but there are certain qualifications he may have now or should be ready to develop. In anything that concerns qualifications, there are the "ideals" and also the minimal standards, but for our purposes let's see what are the budding dealer's *real* requirements.



The dealer will need to acquire some technical training. If he is presently doing installation work that involves sizing for heating needs, working with sheet metal, electrical wiring, or plumbing, he is trained for a great part of the installation work. If he has worked with calculation of heating loads, then another necessary part of his training has been completed. This does not mean that it is now a simple extension of this knowledge to air conditioning as techniques here are considerably more involved and more critical.

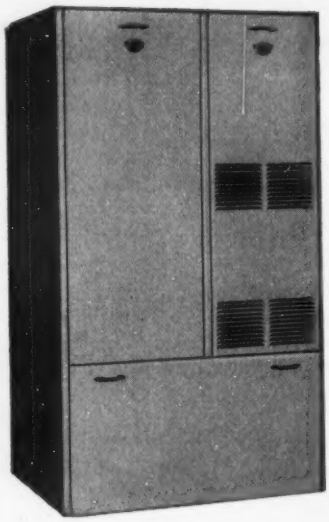
Many colleges and junior colleges have basic introductory courses that would be invaluable, and some manufacturers offer special schools for distributors and personnel. For the semi-experienced, they are a worthwhile review and for the novice, they are essential. Day & Night, as well as many other manufacturers, provide these courses which should be investigated by the dealer.

If the dealership is already established in some other primary line, such as heating, then the question is one of expanding or adding new facilities.

The dealer might consult with his accountant, examine his own books, talk with his local banker and present distributor. Each of these sources together will give a clear picture of his present position, his needs and his capabilities. What a dealer will add in the way of personnel, inventory, tools, capital equipment, etc., will largely depend upon his own position; but he should remember that a new department necessarily entails an increase in capital *and* overhead. It can be expensive, but it need not be.

In the excitement of entering the residential air conditioning field, the far more lucrative commercial market should not be overlooked. Commercial climate control is no longer limited to theaters and restaurants. Potential customers include the butcher, the baker and the candlestick maker. Several preparatory steps should be taken before entering the field, however, and these are outlined here by an expert.

SHARP POINT! WEATHERAMIC SALES APPEAL



HEATING-COOLING COMBINATION

To make a penetrating selling point long before you get to the feature story, show Utility's Weatheramic® Air Conditioner. At first sight, this year 'round combination heating-cooling unit puts up a winning selling "front" in an eye-pleasing new color—Bank Note Green. With Bonderized undercoat and durable baked enamel exterior, new Bank Note Green is truly a lifetime finish.

Under its dashing appearance beats a sturdy heart by Utility, with all the years-ahead refinements you've come to expect: "Floating Chassis" eliminates cabinet vibration—permits installation of furnace cabinet now, hermetically sealed refrigeration unit later; large 12" double width blower resiliently mounted to shush fan noises to a bare murmur; fully automatic controls for split-second switch from summer-to-winter, winter-to-summer operation; compact cabinet styling to save precious floor space.

To build and maintain your already enviable reputation, next time be sure to specify the distinguished good looks, superior engineering, guaranteed dependability and common sense pricing of Utility Weatheramic® Heating-Cooling Combinations.

UTILITY APPLIANCE CORP. Manufacturers of Utility Furnaces, Air Coolers, Air Conditioners, Water Heaters and Gaffers & Sattler and Occidental Gas Ranges

Weatheramic LINE UTILITY

FORCED AIR FURNACES / AIR CONDITIONERS

UTILITY APPLIANCE CORP. 4051 south alameda street, los angeles 58, california

When the L. P. gas dealer has decided that he and his firm are willing and capable of entering this field, he should next think of establishing a product line. There is much discussion among heating and air conditioning dealers as to the merits of carrying more than one line of equipment, but it is safe to say that for the relative newcomer to the industry, one line is the most satisfactory way to begin. First, it reduces by 50 per cent the inventory requirements. Secondly, where so much depends on product knowledge, it behooves the dealer to minimize the demands upon his own capabilities.

"The choice of a product is one of the most important decisions the dealer will make . . . . He will invest time and money into this product before returns begin — a poor choice will cost money and a wise choice may make the difference between success and failure. . . . The investment . . . is worth some shopping around."

While there are many basic similarities in all modern refrigerated air conditioning equipment, there are also many essential differences—and it is these features that make the difference at the time of the sale. The dealer who has more than one line to sell divides both his effort and his ability in many cases, and must be prepared to pay for this in return for the dubious advantage of being able to offer his customer a choice. This, however, should not be interpreted to mean that the dealer should in any way reduce his effectiveness at the time of the sale by lacking the right product for the job. Quite the contrary—it is essential to the dealer that he have a model and a size for every application. In other words, "a complete line."

If a dealer already handles heating, chances are that his present line of heating equipment also has a companion line of air conditioning equipment to which he might have been exposed by the distributor or manufacturer's representative. He should not accept these products blindly. While he may be convinced that the heating products are the "finest made," or perfectly adapted to his needs, there is a great deal of difference between the manufacturing of heating equipment and that of manufacturing modern refrigerated air conditioning units.

The choice of product is one of the most important decisions the dealer will make, especially for the novice in the field. He will invest time and money into this product before returns begin—a poor choice will cost money and a wise choice may make the difference between failure and success. He should investigate the present distributor's line first, but he should not stop there. The investment he is going to make is worth some "shopping around." The dealer should look for the following items in every product to which he is exposed:

1. Quality — The line taken on should be a quality line. This doesn't mean that the price must be the "highest" or the manufacturer the "oldest," but it does mean that they should be willing to stand behind the product with a solid guarantee that assures the dealer and his customers of satisfaction. The dealer must always try to avoid the costly "call-backs" due to equipment failure. During the first few years of his operation, this may be an all important factor.

2. Complete Line — As discussed above, the dealer should look for a line that will fit all applications which he might expect to encounter in his area. While the L. P. gas dealer is often arbitrarily associated with rural areas, there are also a great many metropolitan areas served by various types of bottled gases. His applications, whether he serves a rural or metropolitan area, will probably run the entire gamut, so a complete line is the best sales insurance possible and it doesn't cost a cent.

3. Service — To the new dealer this is probably the most important factor of his entire operation. And many established dealers might do well to re-appraise their present source of supply in the hard light of competition. This does not mean that the distributor and the manufacturer should handle repair and maintenance business. It has a far wider meaning than this. How about delivery? Does the distributor stock sufficient inventory to handle the dealer's needs at peak seasons? Does the manufacturer have an established record of meet-

Training is one of the most important considerations before entering the commercial air conditioning field. Every dealer must be trained in the complexities of the new industry. Pictured above is one of the dealer schools sponsored by Day & Night.

Single Barrel Tank Trucks:
Capacities 1800 to 2200 W. G.

For Economical, Swift Transport
One of Delta's new single barrel transports, embodying advanced engineering features. This rolling giant has 9400 W. G. capacity. Also available in lower "neck-down" model. Write for full description and prices.

DELTA TANK MANUFACTURING CO., INC.
Baton Rouge, La. • Macon, Ga. • Beardstown, Ill.
Export Office: International Trade Mart, New Orleans, La.

ing his commitments? Do they have a heating and air conditioning department to help a dealer over the "humps" for the first few jobs or one to which he can return in years to come for help on that "super-custom" job? What type of engineering and sales training program do they offer? Does the manufacturer participate in this so that the dealer has a direct "pipeline" to the source? Do they really sell their product — both to the dealer and to the consuming public? What type of sales aids, jobsigns, advertising literature, point-of-purchase displays, and co-operative advertising policy do they have? Are they willing to help a dealer pre-sell their product through national advertising or better yet strong local support. In short, what will they do to help?

"... he should insist that the distributor and manufacturer join with him in laying sales plans. They should suggest his general plan of operation, his advertising, etc. He is going to have to learn the business (or at least a new product, and they should be prepared to supply him with the essential tools."

4. Price — Lest we forget, the dealer should check the pricing policies of the distributor and the manufacturer. He should not look for the cheapest unit, but be sure that he is competitive with other dealers on comparable products.

Now, assuming that a dealer has come this far, there is one last and vital step to be made—and it is not one that he should make alone. Having tentatively chosen a source of supply, he should insist that the distributor and manufacturer join with him in laying sales plans. They should suggest his general plan of operation, his advertising, etc. He is going to have to learn the business, or at least a new product, and they should be prepared to supply him with the essential tools. The tools, not only to learn, but the tools with which to sell. As we said earlier, air conditioning — like heating, water heaters, dryers, stoves or any other product — has to be sold, and the dealer will have to sell it.

Let's assume that an L. P. gas dealer has "entered" the field. Well, then he should tell everybody about it! He should make them really know that his dealership is air conditioning headquarters for his area. First, it should be announced to his old customers with a formal mailing that tells them of the expansion and thanks their past patronage for making it possible for him to "better serve their needs." Then, if the dealer serves a metropolitan area or a small rural town, he might have an open house at the beginning of his cooling season. The distributor will furnish extra literature and sales material for this purpose and both he and the manufacturer may be glad to participate in a "grand opening" by sending some personnel down to answer questions or by assisting the dealer financially. The name of everybody who "drops in" should be secured — that's the nucleus of a prospect list that is worth mailing to or even worth giving a personal follow-up call. A "gimmick" might be used to draw the public — maybe a drawing for a free stove or some other appliance. This gives the dealer an automatic list of "traffic" too.

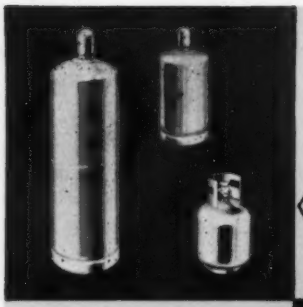
"Let's assume that an L. P. gas dealer has entered the field. Well, then he should tell everybody about it! He should make them really know that his dealership is air conditioning headquarters for his area. First, it should be announced ... with a formal mailing ... then ... he should have an open house ...."

Then, a dealer should make a mailing to both old customers and prospects and follow this up with invoice stuffers on the product line. Most manufacturers furnish this material at no charge and such mailings are "free." An advertisement for the opening should be run and continued throughout the entire season with a regular, if sometimes modest, schedule. The local newspaper should be informed of the expansion — remember it's news to him, too. If the dealer has any doubts about what he wants in print he could write the maunfacturer for help. The manufacturer has a public relations department to frame up an acceptable story that can be changed slightly to put the emphasis where the dealer wants it.

If the dealer has been in the heating business, he has a ready customer file in his old invoices. He could call personally on the "most likely," see that the "next most likely" either gets a phone call or a special mailing, and make certain the rest learn, everytime a service call is made, that he is in the air conditioning business. He should confer periodically with his distributor to get new ideas and corner the manufacturer's representative everytime he's in town. He sees operations from a nationwide level and his advice can be invaluable. The dealer should not be afraid to ask for advice, or be afraid to take it either.

"If the dealer has been in the heating business, he has a ready customer file in his old invoices. He could call personally on the 'most likely,' see that the 'next most likely' either get a phone call or a special mailing, and make certain the rest learn, every time a service call is made ...."

While this outline does not necessarily represent the chronological order of the beginning dealer's progress, it has brought us now to a section that might be called "selling the prospect." Much has been written about selling the commercial air con-



100 lb. Cylinder
60 lb. Cylinder
20 lb. Cylinder

Cylinder Valve
Cat. No. 21001

Tee Check Assembly
Cat. No. 30070

Automatic
System Package
Cat. No. 91013

Low Pressure Regulator
Cat. No. 31015

Weatherhead service satisfies!

Your business goes where dependable quality is found and it stays where good service is rendered.

That's why Weatherhead is dedicated to the development of products which fit your specific needs and to the prompt and intelligent handling of your every order.

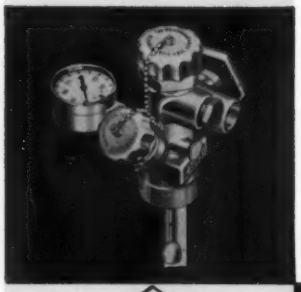
It is through these efforts which are the keys to complete customer satisfaction that Weatherhead strives to merit your continued business.

Whenever you look to Weatherhead, you will find service that satisfies.

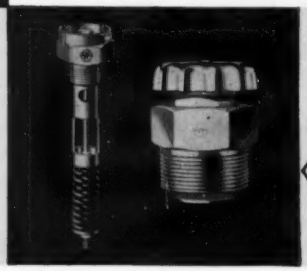
WEATHERHEAD

. . . is showing the way!

The Weatherhead Company — Cleveland 8, Ohio • In Canada — St. Thomas, Ont.



Tank Unit Assembly
Cat. No. 42000
w/optional
Pressure Gauge



Internal Relief Valve
Cat. No. 22018

Vapor Return Valve
Cat. No. 25002

With Weathco, you can stretch your buying dollars because Weathco offers: (1) cylinder leasing plans that help you save your working capital for other current needs; and (2) complete, "packaged" bottled gas systems on 5 year payment terms—these systems earn for you while you pay for them.

ditioning market and it is available in many forms. From a personal point of view for the small commercial market, there is one, and only one, way to culminate a sale: show the prospect how the investment in such a product will pay for itself in increased profit. This may appear to be over-simplified, but except for rare instances there are few sales made that are not based upon this salient fact. It might be wise at this point to examine a case history of a sale to illustrate this point.

The sale was made in a small Midwestern suburb to a customer operating a drug store and soda fountain. The motivation stemmed from the customer's desire to increase his summer sales which had traditionally suffered despite the theoretical pull of the soda fountain. The dealer pointed out that the fountain's lunch volume fell off during the summer despite the "light" type of meals served and added that he was losing business to a conventional restaurant that was partially air conditioned. In addition to this, his normal drug and sunray business felt the impact of the "one-stop" super-markets which shortened the customer's shopping time during the hot weather. With air conditioning, the dealer pointed out, drug store traffic and profit would be increased as well as the fountain service.

"The hardware merchant pointed out . . . increased traffic from women shoppers . . . increased weekend traffic in garden and summer supplies . . . employee satisfaction and increased effectiveness . . . shelf stocking, sales effectiveness, inventory procedures and all other routine operations improved dramatically."

In addition to these primary areas, the secondary advantage of increased effectiveness of sales personnel both at the luncheon counter and in the drug area would net additional savings. These were all fine points and were well brought out by the dealer in question, but his most effective sales demonstration took place after the original interest had been created. The dealer arranged a luncheon appointment with a local hardware dealer who had air conditioned his store the previous year. Here was his most potent selling tool: endorsement by a satisfied customer. The hardware merchant pointed out three things:

1. Increased traffic from women shoppers who would take the extra time necessary to shop for items when they could do so in comfort.

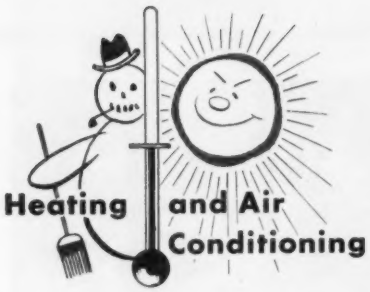
2. Increased weekend traffic in garden and summer supplies to the disadvantage of specialized roadside "garden stores" which were usually closer to the shopper's home and had previously cut heavily into summer business. Much of this was attributed to a wider selection that the customer appreciated, but had previously sacrificed during the hot summer months in preference to the proximity of competing outlets.

3. Employee satisfaction and increased effectiveness had actually been the original cause for this investment, and in the proprietor's mind was sufficient to justify the expenditure. Shelf stocking, sales effectiveness, inventory procedures and all other routine operations improved dramatically. Incidentally, this merchant pointed that his employees preferred to stay in the store and work on their breaks during the hotter spells.

The sale of the equipment was actually made during the conversation, but only careful engineering provided the dealer with a satisfied customer that he would use later as another "endorsement" of air conditioning.

The market is here both in need and in quality. It provides an opportunity for the alert and aggressive dealer anywhere in the United States to capitalize a secure future in the industry in these coming years. But, there are the "walking" years that will necessarily proceed the "running" in any developmental step. Close attention to the outline listed here will provide the dealer with a check-list if he is new to the industry and a review for the experienced. Small commercial air conditioning is his opportunity. ■

One of the greatest commercial demands for air conditioning is in eating places. Not only restaurants but even school cafeterias serve more customers when air conditioning is installed.



BPN exclusive

Degree-day counter 'saves the day'

By LYMAN ADAMS • Ideal Gas Service, Wooster, Ohio

AFTER four years as an L. P. gas bulk dealership, during which time our company underwent a rapid growth, we suddenly found ourselves faced by a difficult delivery problem. We had 400 accounts to handle without an adequate routing and scheduling system.

During the previous years, when we had fewer accounts, we cared for our fuel delivery by running regular routes. With 400 tanks to fill, however, we could not continue on the route system without buying another truck to get us over our peak load.

We decided that filling tanks when they needed filling rather than on a route basis was the answer to our problem and that this could be done effectively if we adopted a degree-day system.

The degree-day system might be explained as a method for calculating, while sitting in the office, how much gas a customer is using for heating his home. If you know how much gas he had, and how much he has used, you know how much he has left.

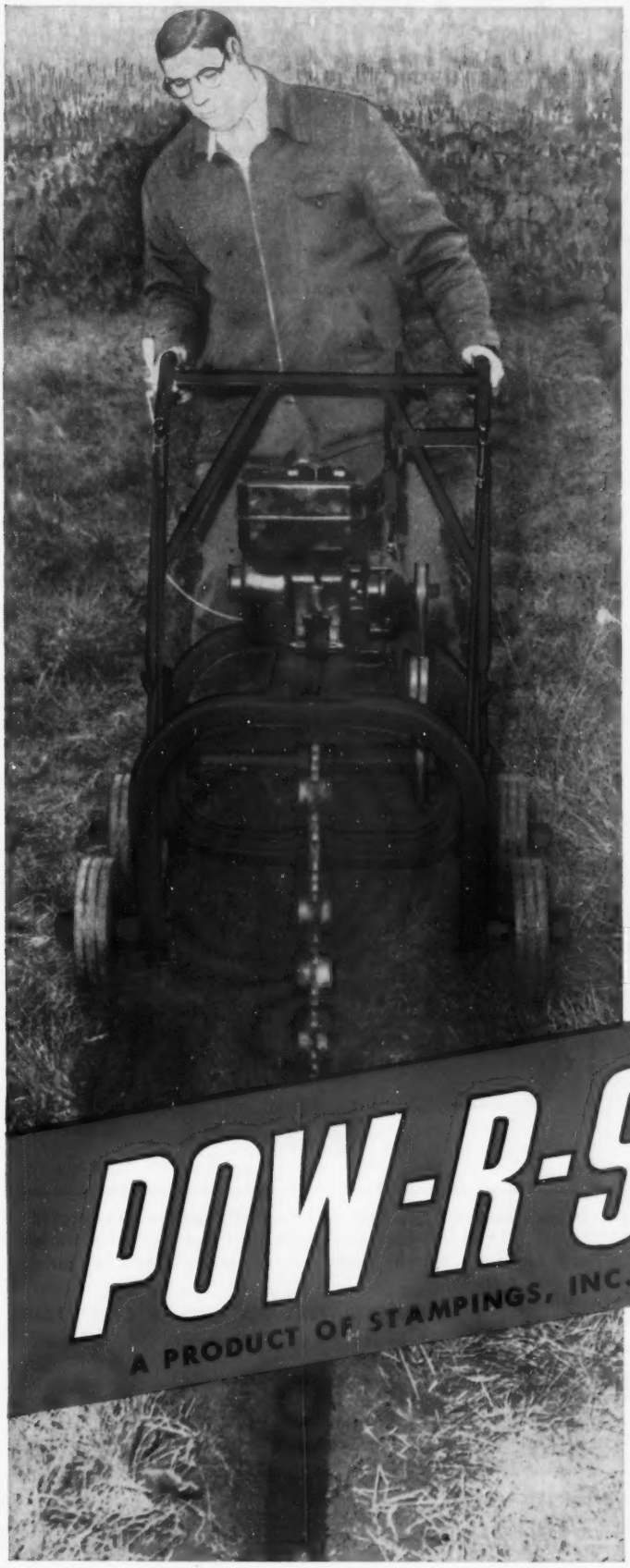
The system is based on the assumption that most heating customers will require heat when the temperature falls below 65° F. A unit called a degree-day is used in calculating fuel consumtion by recording how far below 65° the temperature has gone and the duration of that temperature drop. A degree-day is simply the difference between the average daily temperature, when it is below 65°, and the number 65. For example, when the average daily temperature is 40° F., there are 25 degree-days on that particular day.

The average daily temperature has always been obtained by taking an average of the high temperature and low temperature as reported by the weather bureau.

We used weather bureau figures which we obtained from a Cleveland newspaper. It was the job of our bookkeeper each morning to take the high and low temperatures from the newspaper, average them and subtract this amount from 65.

This system, however, did not give us the delivery information for which we had hoped. There were two basic problems in using the degree-day information obtained in this manner. The Cleveland weather situation, reported in the newspaper we received, was different from ours in Wooster. The high and low temperatures reported, therefore, were not necessarily the high and low temperatures actually reached in our delivery area. In addition, and probably more important, an average of the high and low temperatures cover up the duration of the cold period. The fact that the warm hours were far fewer than

Automatic degree-day counter provides greater accuracy for degree-day delivery systems.



NEW!...

a great labor-saving machine that reduces man-hours to minutes!

RAPIDLY DIGS A 2½ INCH WIDE TRENCH FOR PIPE AND TUBING FOR BULK INSTALLATIONS

1. **Eliminates costly, time-wasting hand digging.**
2. **Loaded, transported, unloaded at job by one man.**
3. **Designed for operation by one man. Handy controls.**
4. **Makes for a neat installation. No unsightly lawn scars.**
5. **A muscle and back saver that wins workers' co-operation. Investment rapidly repaid in time, money and morale.**
6. **Economical, safe, simple to operate. Rigid. Sturdy. Light in weight. Oil sealed bearings. 4 cycle standard gas engine.**
7. **Digs as deep as 24" at a rate that actually reduces hours to minutes.**
8. **Tested and approved by competent engineers under actual conditions. A quality product by Stampings, Inc. and so guaranteed.**

STAMPINGS INCORPORATED

POW-R-SPADE®

A PRODUCT OF STAMPINGS, INC., DAVENPORT, IOWA

STAMPINGS, INC. Davenport, Iowa

Gentlemen: Please send me complete information about the new POW-R-SPADE that reduces man hours to minutes.

Your Name _____

Firm Name _____

Address _____

City _____ State _____

Here are the features your next delivery unit should have..

AND ONLY AMERICAN GIVES THEM TO YOU

A Custom Unit at Lowest Cost

New super-safe plumbing system increases pumping capacity . . . makes delivery faster . . . saves time and money.

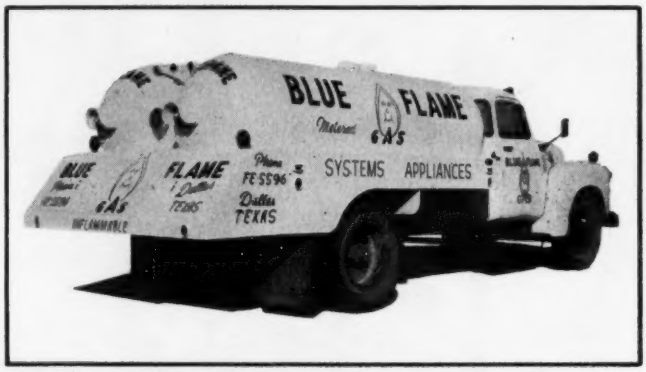
Tanks are locked to truck. Positively won't slip forward . . . a great driver-protection feature in case of accident.

Best balanced units on the road. American delivery units save wear and tear on trucks, give greater safety.

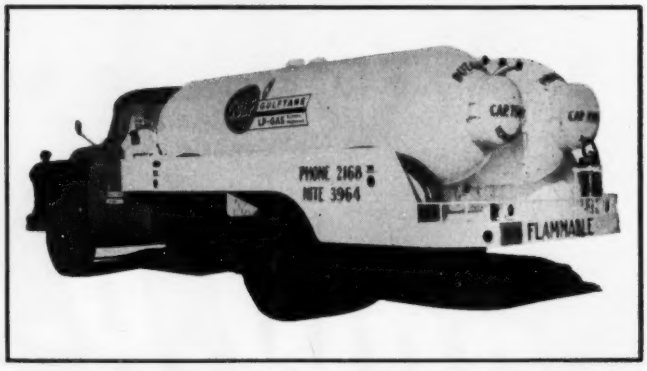
Motor fuel tank and meter mounted in rear . . . can't be side-swiped or sheared off . . . another American safety feature.

Quick changeover . . . when your long lasting American tanks are ready for a new truck, they can be changed over in just a few minutes . . . another American plus.

Good Looks . . . American delivery units are streamlined and good-looking . . give you the extra safety you need with the smart appearance you want.



Deluxe Model N17. A completely enclosed, compact unit designed with all controls, motor fuel tank, meter, hose reel, power take-off and clutch controls in rear cabinet. Particularly desirable for dealers in northern areas . . . keeps all controls and equipment clean, fully protected from snow, ice or rain.



Deluxe Model B21. Fuel tank and fire extinguisher located in rear . . . meter and hose on catwalk next to driver. Also available with fuel tank, clutch, power take-off and hose reel in rear.

FINANCING AVAILABLE — Write for Information

HEADQUARTERS FOR THE LP GAS DEALER
1 order • 1 shipment • 1 invoice

Telephone STerling 4916

American Tank
AND MANUFACTURING COMPANY INC.

2136 WEST COMMERCE STREET • BOX 5525 • DALLAS 22, TEXAS

ALSO AVAILABLE AT:

Jackson, Mississippi
P. O. Box 2563
Highway 80 East, Phone 3-8726

P. O. Box 1555
North Miami, Fla.

Littlefield, Texas
306 N. Ripley
P. O. Box 689, Phone 228 MX

the cold hours was lost in the average and we found that the warm fall days cancelled out the cold nights, making it look as if no degree-days had occurred.

After degree-days are calculated, a so-called "K-factor" is arrived at. The K-factor is the number of degree-days a customer will take to burn one gallon of fuel and is the key in tipping a degree-day user off to how much fuel the customer still has. Our K-factor would vary considerably and we made a few errors in calculations.

Frankly, we were discouraged at that time and regretted the time we had spent in setting up the degree-day card system.

In early October, a representative of the Hidy-Brown Recorder Co. called at our office. The first things he pointed out were that weather bureau figures are not published in a form that makes accurate degree-day calculations possible, and that the K-factor will vary considerably in the spring and fall. His solution was the Hidy Degree-Day Recorder, an instrument which counts and records only temperatures below 65°.

The dial of the recorder is moved constantly by a 12-hour clock and as the mercury-actuated thermometer arm is moved back and forth across the silver contacts which are calibrated in degree-days, an accurate degree-day record can be obtained.

In looking over our card system, it was found that the alphabetical customers' file was satisfactory, as the cards contained the customer's name and address, approximate location by zone or route, type of burner, size of tank, place for K-factor, and ideal fill in gallons on the top section. On the bottom part of the card, vertical lines separated the following headings: date, gallons delivered, gallons in tank, and degree-days before next delivery.

The next thing we reviewed was the method of figuring K-factors. This is done by dividing gallons burned into the degree-days that were counted between fills. We had done this on a calculator, but the Hidy-Brown representative supplied us with a simple slide rule which is much quicker. The representative then asked to see our degree-day file and here we batted zero as we had tried to run everything from our alphabetical file.

It was then explained to us that a card is needed for every 100 degree-days—100, 200, 300, etc., and that the customer's name must be placed on the appropriate degree-day card. For example, if the alphabetical card showed the next delivery to be at 421 degree-days, then that customer's name must be put on the 400 degree-day card along with all other customers needing gas between 400 and 500 degree-days. The gallons to be delivered and approximate location also go on the card, and the card is then filed. When "400 degree-days" then appears on the Hidy Degree-Day Recorder, the card is pulled and all customers on the card are set up for delivery. This card has then completed its usefulness, other than to be a check against deliveries. Until you have a delivery ticket for everyone on the card, someone is apt to run out of gas.

We enjoy the convenience of the degree-day recorder and the fact that one 24-hour period after another is built up to give us our final year's degree-days. We will set our recorder back to zero on July 1st to start the next year. We also know that with its use we are not accumulating any human error.

We plan to let our customers know we have installed the degree-day recorder by our advertising in the paper and by a sign in our office, as we feel this will create a feeling in the customers' minds that we go to no end of trouble to serve them well.

We have put all our customers on this system, even though some are credit problems and some wish to call us themselves when they need gas. We did this because the system permits us to call the problem customers a few days in advance so they can be prepared to pay on delivery and so they realize we do a good job of knowing their requirements.

We know we are getting larger deliveries per stop, and that our cost of delivering a gallon of gas is less because we deliver more gas per mile. We believe our trucks can take care of 20 to 30 per cent more customers on this system than with the route system previously used.

Like any other system, the degree-day delivery method must be kept up. If the living habits of a customer change, so will his K-factor. For that reason we always try to deliver our gas when the customer's tank is still 20 per cent full.

The degree-day system using the Hidy recorder has resulted in a happy blend of a huge saving in delivery costs for us and better service with greater satisfaction for our customers. Our problem has been solved. ■

RESIDENCE — E.D.H. — CONSUMPTION L. P. GAS

House Temperature 72°

Date	Gallons In Tank	Gallons Used	Counter Degree Days	Counter K Factor	W. B. Degree Days	W. B. K Factor
9-21	420	Start	0	0	0	0
10-5	390	30	100	3.1	62	2.1
10-9	370	50	156	3.1	93	1.8
10-15	350	70	222	3.1	137	1.9
10-20	320	100	310	3.1	213	2.1
10-25	290	130	397	3.1	285	2.2
11-1	260	160	495	3.1	360	2.2
11-8	245	175	556	3.1	406	2.3
11-12	220	200	625	3.1	473	2.3
11-16	195	225	712	3.1	544	2.4
11-22	160	260	812	3.1	633	2.4
11-28	120	300	948	3.1	756	2.5
11-30	100	320	1017	3.1	808	2.5
12-1	90	330	1042	3.1	830	2.5
Added	400	490	-			
12-3	820	478	342	1092	3.1	866	2.5
12-6		455	365	1158	3.1	923	2.5
12-9		430	390	1242	3.1	1004	2.6
12-11		405	415	1314	3.1	1075	2.6
12-13		388	432	1350	3.1	1094	2.5
12-16		375	445	1378	3.1	1120	2.5
12-22		320	500	1550	3.1	1268	2.5
12-25		290	530	1650	3.1	1384	2.6
12-28		245	575	1770	3.1	1496	2.6

Chart shows how the Hidy-Brown degree-day counter compares in accuracy with degree-day figures calculated from weather bureau information. Note especially the two K factors.

RED BRUMIT SAYS

Let's be Basic . . .

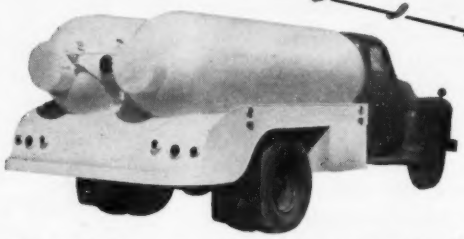
3 essentials

MATERIAL
MEN
KNOW-HOW

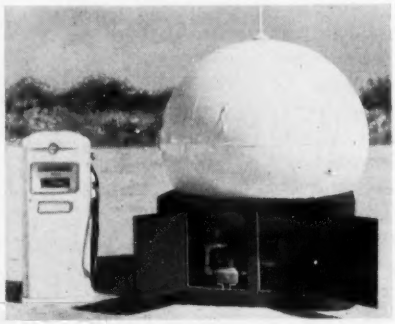
} A Good Product

It takes all three of these to produce *any* kind of product . . . BUT the quality of the product depends on the degree of quality of each of the three ingredients. The best MATERIAL, which we use, of course, is available to all who would pay its price. MANPOWER is also available to all. Yet our manpower is trained for our specific problems . . . schooled to the point of real craftsmanship. KNOW-HOW, real know-how, cannot be bought. It is acquired mostly through years of experience. The know-how at Dal-Worth is backed by 32 years' successful experience.

You can bring ALL your tank needs to Dal-Worth in complete confidence knowing that they will receive the best in each of these basic ingredients. QUALITY MATERIALS . . . REAL CRAFTSMANSHIP . . . and KNOW-HOW BACKED BY YEARS OF EXPERIENCE.



There is the same advanced styling and engineering for service and economy in all our propane-butane and anhydrous ammonia tanks, such as this 1200 - 2000-gallon delivery unit with equipment installed to meet any state's specifications, or the . . .



Space-Mizer LP Gas Dispenser; 1000, 2000 or 3000 WG capacity; completely self-contained with choice of equipment and colors. This is the ideal unit for service stations, fleet operators and LP gas dealers.

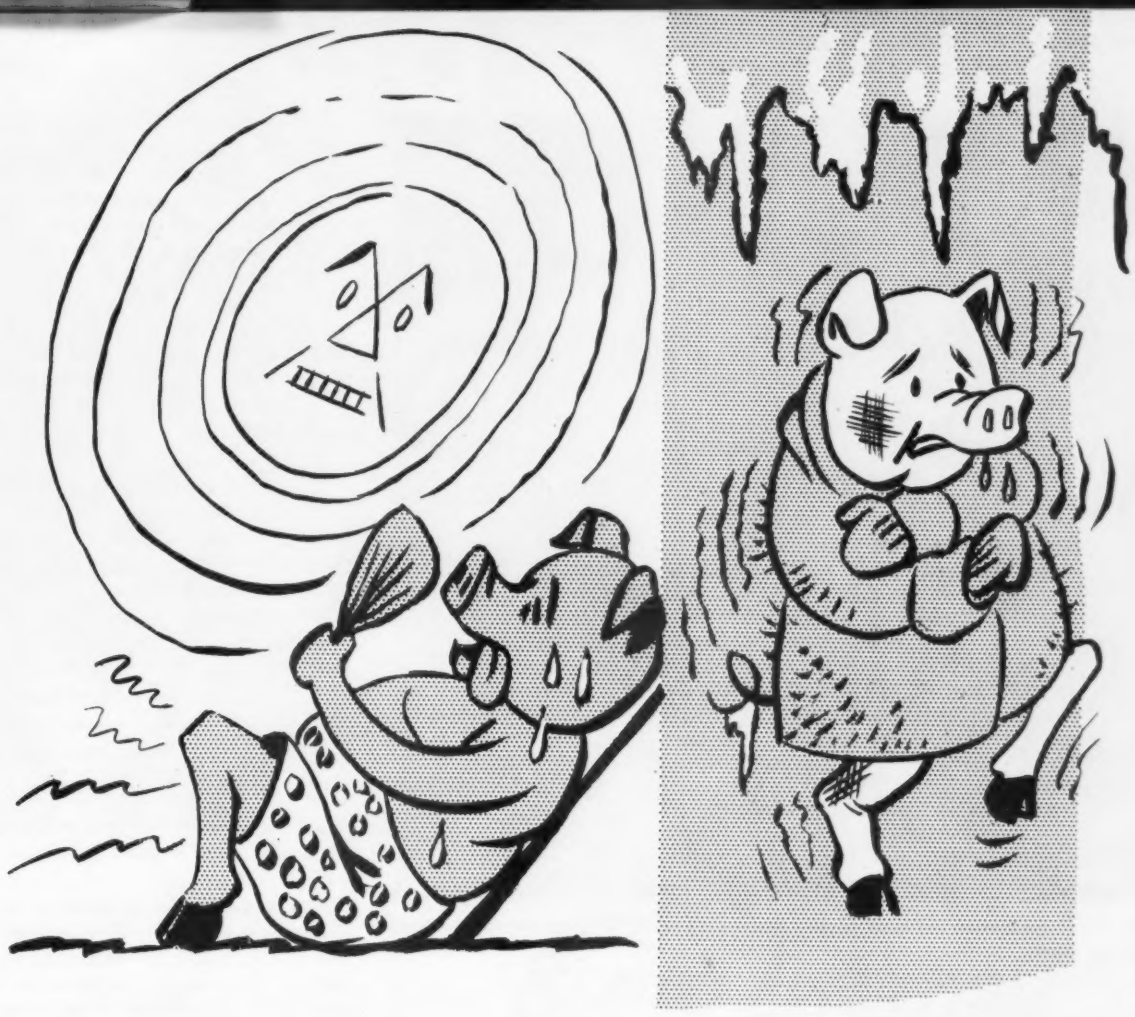
CERTIFIED CONSTRUCTION
DAL-WORTH TANK CO.

DAL-WORTH
TANK COMPANY

W. G. (RED) BRUMIT, OWNER

A KNOW-HOW BACKED BY 32 YEARS OF EXPERIENCE

BOX 818 GRAND PRAIRIE, TEXAS



Animals want comfort, too

WHILE all-year air conditioning for human beings is justified for comfort and health benefits, all-year air conditioning for animals goes even further. It can result in better animal health, more rapid growth, higher reproduction, greater survival, larger production and a lower feeding bill, all adding up to more profit for the farmer.

Studies of the effects of air conditioning on farm animals are being conducted in several quarters to determine whether an investment by a farmer in air conditioning equipment would be profitable.

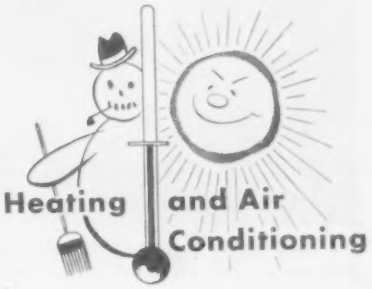
One researcher, H. L. Garver of the United States Department of Agriculture, has already reported that "the outlook and potential for air conditioning in the agricultural field looks promising." This might well mean another agricultural market for L. P. gas and appliances.

The USDA, Mr. Garver reports, has found that feed consumption can be held to a minimum with a controlled temperature. A warm environment in the winter will decrease food consumption as the animal is not required to generate so much heat.

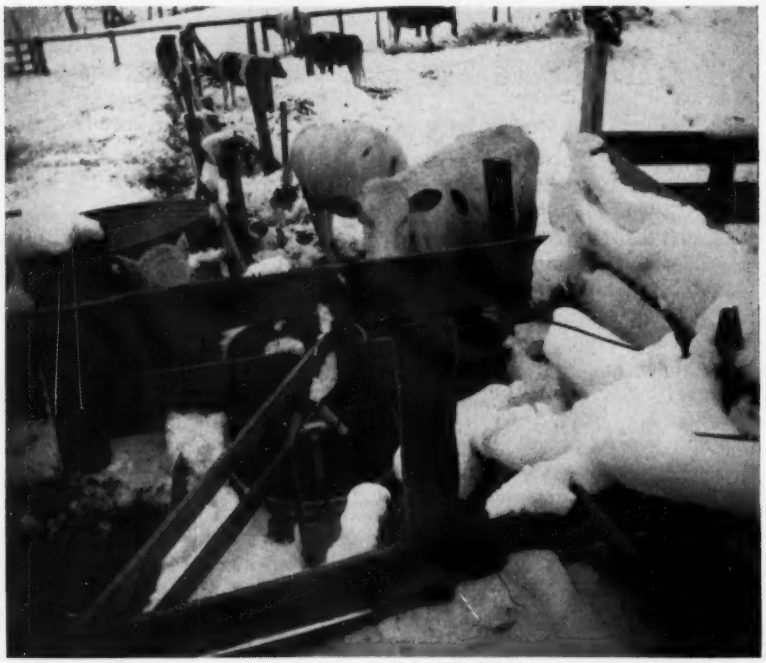
Pig farrowing in a controlled atmosphere has already shown results. One farmer has managed to save one to three more pigs per litter by heating his farrowing house during the winter. A study conducted at the Purdue University Agricultural Experiment station has shown that 17 per cent more pigs can be saved with a heated pen. In addition, pigs raised in heated pens were 1.4 lb heavier at 56 days of age.

The saving of bedding and pen cleaning labor as the result of heat and ventilation in the pens has shown to more than pay for the costs of providing the heat and ventilation. A midwestern farmer reported that since installation of heating equipment, he cleans the pens twice each week rather than daily or twice daily.

But, just as more newborn pigs survive in a warmer atmosphere during the winter, so survival is greater in a cooler atmosphere during the hot summer months. Cooling the pens of summer farrowed pigs can also save an average of two more pigs per litter.



All-year air conditioning can mean not only more meat on Porky but more offspring for Porky and her owner.



Old Bossy will give more and better milk if she is taken out of the cold and put into a heated barn. Not only that, but she will eat less, too.

Summer cooling of dairy cows and cattle has resulted in healthier animals which provide more milk or beef. Dairy cows need cooling in hot weather, especially when the temperature rises above 70 to 75° F, or milk production will fall off. The average Holstein cow has been found to lose 16 lb of milk per day if daytime temperature rises from 70° to 90°. One report shows that the gain in milk more than pays for the air conditioning cost.

A California farmer who raises a herd of 6500 cattle found that his animals gained from ¼ to ½ lb more per day as the result of sprinkling the roof of the barn with water. In the dry California atmosphere this provides measurable cooling due to evaporation. It would probably be ineffective in more humid climates.

A poultry house that is both heated and cooled will result in lower mortality rates when the birds are small, as has been demonstrated in the use of brooders, and then a lower mortality rate when the fowl is grown if air conditioning is used during the hot summer.

Just as vegetation is grown in an atmosphere with controlled temperature and humidity for maximum results, so the raising of animals in a controlled atmosphere, including winter heating and summer cooling, controlled humidity, planned ventilation and air circulation and control of odors, will bring maximum results—the best product for the least cost.

A. J. Hess, chairman of the American Society of Heating & Air Conditioning Engineers technical advisory committee on plant and animal husbandry, reports that much economic justification has already been found for year-around air conditioning for animals. Mr. Hess agreed that the benefits to be gained, including better quality meat and dairy products, can mean a profit to the farmer above the cost of maintaining the controlled climate.

L. P. gas dealers would be wise to keep animal comfort in mind when selling all-year air conditioning to the farmer. The farmer may not wish to spend money on family comfort, but all-year air conditioning for the animals can mean dollars and cents to the farmer and to the dealer who sells the air conditioning equipment and the gas. ■

...and you'll buy BEAIRD EVERYTIME

Here's why men who "know the business" buy more Beaird LP-Gas systems than any other make . . . and why they will tell you Beaird's Big 5 Profit-Maker advantages can put more money in your pocket.

1 No Heavy Inventory Investment – A Beaird stocking point near you assures quick delivery on every size Beaird LP-Gas system. You save inventory money for other business needs.

2 Beaird LP-Gas Systems Are Sized to User Needs – You sell your customer the size that will serve him best. Beaird builds a complete range from 60 to 1,000-gallon capacity for both butane and propane. Underground systems are available, too.

3 You Sell Beaird Quality – Backed by the world's largest manufacturer of LP-Gas systems and built to exacting standards, every system is thoroughly dehydrated by an exclusive thermo-vacuum process and finished in gleaming white enamel. Beaird's high quality is identified to your customers by the Good Housekeeping seal.

4 Beaird Helps You Build Volume – Trained men, experienced in your area, help you get the full potential out of your LP-Gas sales efforts and finance new volume for greater profits.

5 Beaird Advertising Sells LP-Gas – Hard hitting national advertising and dealer sales aids build acceptance and pre-sell your customers. Beaird's merchandising aids are tailored to your sales area.

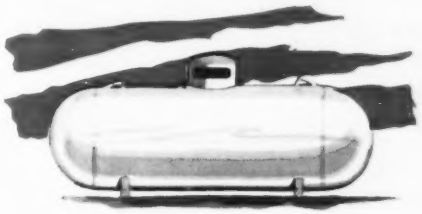
Why buy less when you can get the big 5 . . . contact your Beaird Representative today or write direct to a Beaird factory for an authorized distributor plan.

THE J. B. BEAIRD COMPANY, INC.

BEAIRD

Shreveport, Louisiana
Stockton, California
Beaird Midwest - - soon

LPGB



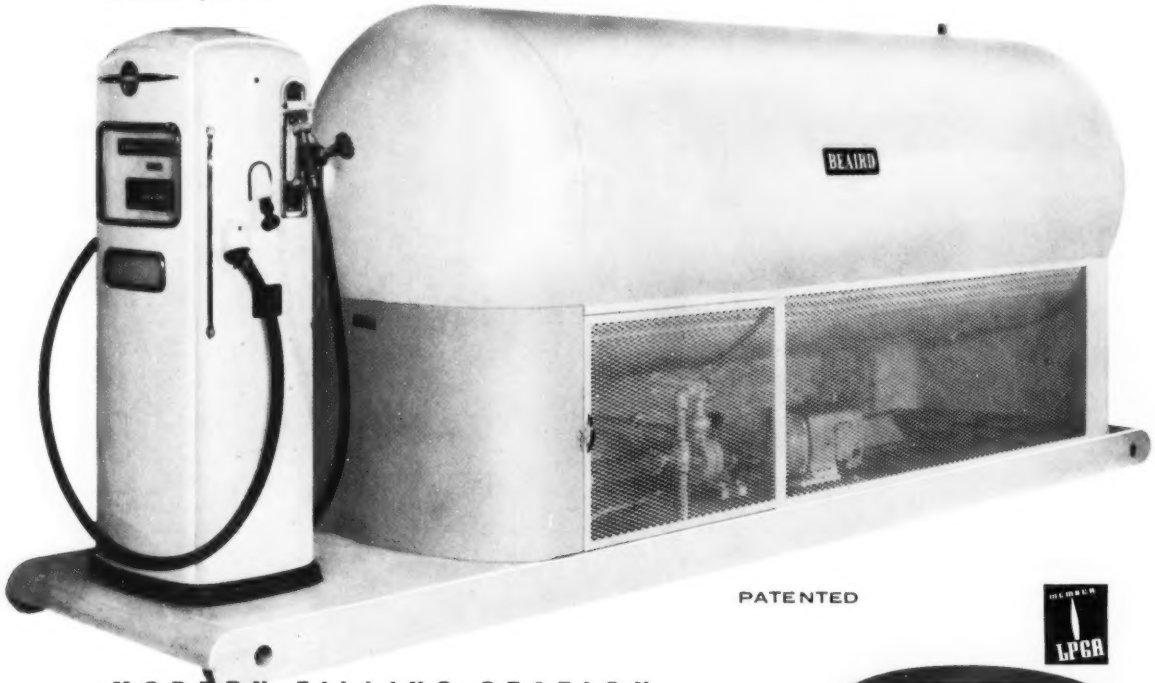
Anhydrous Ammonia | Pressure Bulk Storage | Transports | Filling Station | Beaird South | Beaird West | Beaird Midwest

NOW . . . BUILD A YEAR 'ROUND FUEL LOAD WITH BEAIRD PACKAGED LP-GAS FILLING STATIONS

From Maine to California, truck, bus and fleet owners are converting to LP-Gas fuel . . . and you can sell them. A Beaird Packaged LP-Gas Filling Station is your economical way to year 'round profit in this 489,000,000-gallon market.

You'll find the Beaird filling station is easy to use, compact and simple to fill. Ready to go to work immediately, the unit is delivered fully assembled on a heavy skid base and includes a filling station type dispenser, storage tank, pump, hose and safety controls. There is nothing further to buy. Why wait for the off season slump to catch you? Build a year 'round LP-Gas motor fuel load.

Write today for information on a Beaird Packaged Filling Station sized just right for your area. Or send for Catalog No. 1400 — it's just off the press with the inside story on LP-Gas Filling station operation.



MODERN FILLING STATION CONVENIENCE

PATENTED

LPGA

BEAIRD

Shreveport, Louisiana
Stockton, California

THE J. B. BEAIRD COMPANY, INC.

LP-Gas | Anhydrous Ammonia | Pressure Bulk Storage | Transports | Filling Station

"This Ford F-900 weighs 1,000 lbs. less than other trucks in its class," says Branch Manager Roland Melanson, "but hauls the same payload."

"Ford's saving us $600.00 is just the beginning!"

LP-Gas carrier with fleet of over 60 competitive "heavies" finds '56 Ford F-900 costs less! "The Ford costs $600 less to buy—gets 1½ miles more to the gallon!"

Roland Melanson, Branch Manager of Ritter Trucking Company's Fairfield, Conn. office, goes on to explain, "We have over 60 trucks in the 13,000-lb. weight class hauling single and double barrel tanks. Recently we decided to go into lighter trucks. We put a '56 Ford F-900 and a 10,000-lb. competitive-make truck in our fleet.

"This is how the Ford tractor stacks up so far—the initial cost of the F-900 was $600 less than the competitive make. It weighs 1,000 lbs. less, but pulls the same 50,000-lb. gross as the 10,000-lb. tractor. And we get 5½ miles to a gallon with the Ford, including power take-off operation, as compared to 4 with the other tractor."

"I call this baby the 'hill-leveler'," says driver Raymond Williams, Sr.

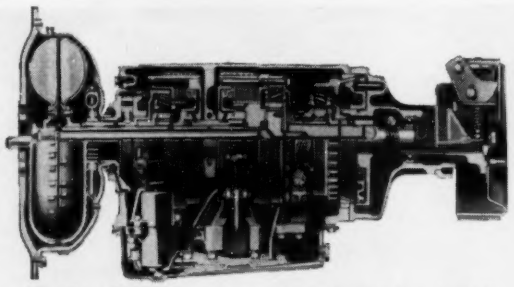
This tryout of an F-900 gives a good indication of how big fleets are taking to Ford for *economy with dependability*. Let's talk turkey, Mr. Truck Owner. Ford has all of the "big" truck qualities without the "big" truck headaches. Ford Trucks are your best buy—they cost less to buy, less to run, and will earn more for your business.

Maybe the F-900 is what you're looking for. Its new maximum GCW is up to 60,000 lbs. And you have your choice of power—the 200-h.p. *Torque King* or the 212-h.p. *Torque King* Special. You can highball this truck anywhere! See your Ford Dealer for the "cost less story" today.

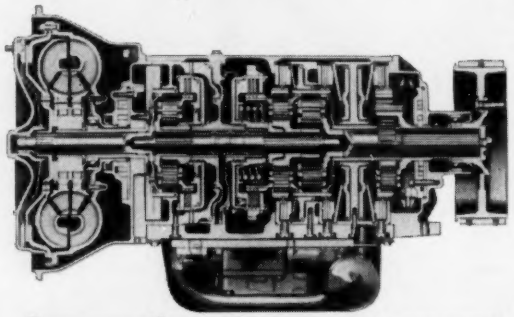
BIG FLEET OWNERS BUY MORE FORD TRUCKS THAN ANY OTHER MAKE

Now there's a great automatic transmission for whichever Chevy truck you choose

Famous Chevrolet *Hydra-Matic*, or all-new *Powermatic*, provides easy, safe automatic driving that's tailored for your truck!



Hydra-Matic—optional in Series 3000 and 4000 models at extra cost—brings new ease to tough jobs, cuts hauling time and maintenance expense.



Powermatic—optional in Series 5000-10000 models at extra cost—assures the easiest, safest big-truck operation ever known! It's a Chevrolet "first."

Pick *any* Chevrolet truck . . . and you'll find there's a modern automatic transmission to make your hauling easier, safer, and more profitable!

If your choice is a Series 3000 or 4000 model, there's ***Hydra-Matic.*** This modern automatic transmission not only gives you the ease of no-shift hauling . . . it also *saves you maintenance money* because the hydraulic coupling protects drive-line parts from shock loads. Or, if your job calls for a 5000 through 10000 Series Chevy, there's exclusive ***Powermatic***—the first automatic transmission designed especially for big trucks! Six fully automatic forward speeds and a torque converter virtually eliminate manual gear shifting on hills or in traffic! A revolutionary "retarder" assures safer down-hill hauling, less brake wear and you make better time through traffic because all shifts are "power-on" shifts!

Now *automatic driving*, available throughout the Chevrolet truck line, gives you one more reason to see your Chevy dealer soon! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

Chevrolet truck manual transmissions are great performers, too!

To give you extra pulling power in the medium- or heavy-duty model you select, Chevrolet trucks provide big, rugged heavy-duty 4-speed Synchro-Mesh transmissions, or brand-new "New Process" 5-speed transmissions!*

**Optional at extra cost in 5000-6000 through 8000 Series models, standard in 9000-10000 Series models.*

CHEVROLET

NEW CHEVROLET TASK·FORCE TRUCKS

Anything less is an old-fashioned truck!

PROPANE PETE • EPISODE NO. 11

Pete outfits a grizzly bear with a new set of teeth

By J. ARTHUR THOMPSON

PROPANE PETE was preachin' the Gospel of L. P. gas up around Durango, Colo., one time, when he decided that a fishin' trip was in order. He persuades a young feller by the name of Carl Heidt to take him out and show him some likely spots.

They took off into the high country with Old Beepee and found a pretty fair one. It was down a ways off the road and they had to leave Beepee parked and walk down to it. It was a sort of wild part of the country and there was plenty big game signs around. Pete wasn't in a huntin' mood and hadn't brought a gun along.

Carl and Pete was fishin' away and pullin' in some small native trout only about 18 to 20 in. long and was discussin' nothin' in particular, when they heard a rustlin' in the bushes up hill a ways.

There was a grizzly bear roamin' around up there. Pete was in a peaceful mood as men generally are when they're fishin', so he just looked at the bear and didn't pay him much mind. He'd just turned back to his fishin' when there was a loud bellow and a big bull elk come chargin' out of the timber and headed for that grizzly.

The grizzly, bein' a bit young and inexperienced, stood his ground. He rares up and hits that bull elk a big swipe with his paw that would have killed anything else. The bull rolls over and lets out another roar and charges again. This time he rakes the bear with his horns and dodges the bear's lunge. Then here comes another bull elk out of the woods and he makes a pass at the bear with his horns.

Well, that young grizzly was in for it! Both them bull elk kept chargin' him and pokin' him with their horns and slashin' at him with their hoofs. The bear was doin' plenty damage himself but it was an unequal fight.

Pete watches for a bit and then declares himself to Carl Heidt: "If thar's anything I abhors, it's an uneven fight, be it man or beast! That bar needs help! You watch the fishin' poles."

Pete gallups up the hill and just as one of the elk kicks the teeth outa that young grizzy, Pete grabs him by the horns and throws him over his head. The elk lands on a rock and that's the end of him. His back is plumb broke.

The bear is just about done up but he's game and still tryin' to fight the other bull elk. So Pete grabs the second one and flings him down. He don't have nothin' for a piggin' string, so he just ties the elk's hind legs together behind his neck and twists his front legs up around his antlers. Well, sir, that elk was so humiliated by his position that he just died right there.

Pete looks over that young grizzly and that bear sure is in bad shape. Ain't no bones broken, but he's cut and bruised all over and besides every danged one of his teeth is kicked out. Pete decided that he'd put up such a game fight that he deserves a chance, so with the help of Carl Heidt, he totes that bear real gently up to where Old Beepee is parked.

Pete gits him a fire goin' with his L. P. campin' rig and cooks up some elk broth which he spoons down the bear's throat. Then he finds some healin' berries around and makes up a salve of elk grease and berry juice which he smears all over the bear's cuts.

The next mornin' the bear is still stiff and sore, but barrin' his missin' teeth, he looks like he's good for a long life. Pete hacks off them elk antlers and rigs himself a L. P. gas burnin' torch. He cuts and burns out a set of false teeth for that there bear outa them antlers. They fit perfect.

That bear was so grateful fur all that Pete had did for him that he named his first cubs, Pete and Repete.

Carl Heidt was so impressed by what Pete could do with L. P. gas that he got into the business and he's runnin' Basin Petroleum at Durango right now. ■

. . . never had a freeze-up!

. . . standby plant worked perfectly!

. . always have uniform pressure!

. . . heat value is constant!

Customer praise builds business! . . . you'll get it with a MITCHELL VAPORIZER on every installation.

MITCHELL Direct-Fired Vaporizers are available in two sizes to meet the need for *continuous LP gas service* in a variety of commercial and industrial applications. For use with above or below ground LP gas systems, MITCHELL Vaporizers provide a safe, steady, constant-BTU supply of gas uninterrupted by freeze-ups due to temporary over-loads or heavy withdrawals.

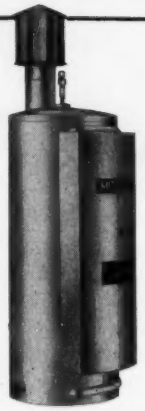
Minimum Size Storage Required MITCHELL Vaporizers eliminate the need for oversize storage tanks to meet temporary over-load demands . . . hence make possible more compact systems. They are designed for use with all heating, drying or stand-by applications requiring from two to several hundred gallons per hour. (For the larger demands, MITCHELL Vaporizers may be manifolded together.)

Automatic Selective Control MITCHELL Patented "Automatic Selective Control" automatically controls the rate of gas vaporized to equal the rate of usage. It permits vaporizer to supply either generated gas, or storage gas . . . or both at the same time. Simple, positive safety devices (providing overflow and pilot burner shut-off protection) make MITCHELL units safe and reliable.

Simple Installation Installation of MITCHELL Vaporizers is simple and easy; and once properly installed, they will give years of constant, trouble-free gas service. All MITCHELL units have been tested and listed under Underwriters' Laboratories' requirements.

Listed by Underwriters' Laboratories

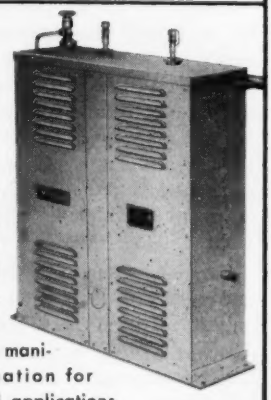
Build a reputation for dependability with MITCHELL VAPORIZERS



Model 30

Provides up to 30 gallons of gas per hour . . . well suited to the small and medium size industrial and commercial applications.

Model 70



Capacity: 70 gallons per hour. This unit is the largest standard MITCHELL Vaporizer. May be used singly or in manifolded combination for large industrial applications

SPECIFICATIONS

Model No.	Ht. (in.)	Dia. or Width (in.)	Depth (in.)	Shpt. Wt. (lbs.)	Rated Input (BTU/hr.)	Wkg. Pres. (psi.)	Pilot Burner (BTU/hr.)	Rated Cap. (gals./hr.)
30	39½	13¼	...	125	30,000	250	1100	30.0
70	39	32	10	460	75,000	250	1100	70.0

JOHN E. MITCHELL COMPANY

3800 COMMERCE STREET • DALLAS, TEXAS

Manufacturers of Fine Machinery for More Than Half a Century

Photo shows the kiln burners which operate on either natural gas or propane at Coors Porcelain Co., Golden, Colo.

BPN exclusive

Switching from natural gas to propane insures protection of ceramics plant

By Gene Creighton

DESPITE severe cold snaps which shut off its natural gas supply, Coors Porcelain Co., ceramic manufacturer of Golden, Colo., manages to maintain critical temperatures in its 10 carefully regulated kilns. Propane, stored in a 60,000-gal. reserve fuel supply, fires the kilns when Coors' natural gas is diverted for domestic use.

Its ability to switch instantly from natural gas to propane, thus maintaining closely controlled temperatures, has figured prominently in the success of the company. The switch from natural to propane is simply effected by throwing a single lever which actuates a two-way three-port valve, instantly admitting a properly proportioned propane-air mixture. This may be directed to any or all of the 10 kilns. Kiln burners are designed to accommodate either natural gas or propane, so no change was necessary when the reserve LPG system was installed.

During peak operation, the 10 kilns consume 300 gal. of propane per hour. The two 30,000-gal. storage tanks mounted at the rear of the Coors plant contain sufficient gas to carry production through a 100-hour period, during which time normal natural gas service is restored or the tanks are refueled by tank trucks. The supply in the tanks is gauged carefully against the average length of sub-zero temperature waves in the area to insure an adequate supply of gas.

Coors management reports that shortly after the turn of the year this past winter the company had its closest call, as far as having to shut down operations because of insufficient gas. "We came a little close," states the company. The necessary replenishment was transported by a truck of the Colorado Natural Gas Co., supplier of the operation, in plenty of time. A Denver concern, Colorado Natural supplies many large accounts in the area.

During the winter of 1954-1955, the propane system was called upon to supply the kilns 14 times. Coors officials keep close tab with government meteorological offices in order to make preparations to convert from natural gas to propane. To date, there have been no losses whatsoever in the changeovers.

Besides the two 30,000-gal. tanks, the reserve system utilizes two American Liquid gas-air machines, mounted side by side in a brick structure directly between the tanks and the plant proper. One gas-air mixer output is 50,000 cu ft per hour, 25,000 cu ft of which is propane. This furnishes more than enough heat to maintain the 10 kilns at a temperature of 2630 to 2640° F. The second diluter represents "a standby on a standby," and increases the output capacity of the ceramics plant by 50%, adding 25,000 cu ft per hour.

Propane lends itself particularly well to the operation because of its ability to maintain very steady temperatures. The firing of alumina oxide ware, one of the primary operations of the plant, requires such careful control that the loss of heat which would occur in a relatively short time if the gas supply were shut off or fluctuated would result in scrapping as much as 95% of the material in the kiln.

Coors utilizes two types of kilns, the standard tunnel kiln in which the ware moves along from one end of a refractory-lined tunnel to the other, and the "baskets" which are merely steel cylinders lined with refractory brick. These baskets are dropped over a stack of ceramic ware, and lifted up when firing is complete.

The company has become the world's largest manufacturer of the grinding balls used by paint manufacturers. Among its many other products, it supplies the electronic industry with cyclotron insulators, insulators for radio vacuum tubes, and other advanced electronic equipment which will outlast glass or metal, previously used for such purposes.

The company in large part credits its excellent low rejection and waste rate to the flexibility and dependability of propane. ■

Washington Report

from BUTANE-PROPANE NEWS, Washington Bureau

Government loans to municipal gas systems

The Housing and Home Finance Administration is beginning to get the first inquiries from cities and counties across the country seeking government loans to build their own natural gas distribution systems.

An official of HHFA's Community Facilities Administration says that the first inquiries on gas distribution loans arrived at the agency within the last six weeks.

Last year, Congress established in the housing bill a $100 million revolving fund for federal loans to cities, counties or any other political subdivision of a state for construction of water, sewer, and gas-distribution systems. The revolving fund has been used several times for water and sewer construction. It is being continued in the housing bill Congress will pass this year.

The revolving fund permits HHFA to lend up to 100 per cent of the cost of a gas distribution system as long as there is a "need" for it. Need, according to officials, means that there is at present no gas-distribution system and that there are potential customers.

Existence of L. P. gas distributors is not considered as an existing gas distribution system.

Critics of the program have complained that this measure "paves the way for the same sort of socialization in gas that has made such progress in electric power." They also contend that provisions of the bill giving priority on the loans to municipalities with under 10,000 population means that it is aimed directly at the areas where the L. P. gas industry is most active.

Wording in the bill that the loans may be used only if there is "an urgent and vital public need" does not protect any existing industry, critics argue, because the need will be determined by bureaucrats "eager to add to the power of government and to please local interests."

Small business loans come easier

The Small Business Administration is making it easier and faster for merchants to secure funds under the Limited Loan Participation program.

In an action stemming in part from the present shortage of risk capital, SBA will permit its 23 branch offices to grant loans under the program without approval from Washington headquarters.

Loans may also be approved on the spot by the agency's 15 regional offices. (Lists of the offices are available by writing to the Small Business Administration, Washington 25, D. C.)

As a result of the new procedure, small retailer, wholesale, and service establishments can receive loans under the Limited Loan Participation program in less than a month after they apply, compared with about six weeks under the previous system.

Under the Limited Loan Participation program, SBA advances up to $15,000 or 75 per cent of a loan, with a local bank providing the remainder of the funds. These loans, available for a number of purposes, are valuable because collateral requirements are less stringent than most bank-type loans, and interest is held to 6 per cent. Maximum term on these loans is five years. Applications for a loan under the program are first made at a local bank.

Government control over mergers

Proponents of a pending measure designed to give the government closer control over business mergers are predicting that it will pass this year.

The bill, H. R. 9424, has already passed the House. It would require firms planning to merge to notify the Federal Trade Commission and the Justice Department 90 days in advance, and would give the government power to seek a temporary court order to prevent the merger if it believes the merger might violate the law. The Eisenhower Administration is split over the measure.

Proponents of the bill say it would give the government time to block unlawful mergers before they are consumated. Once a merger takes place, they say, it is almost impossible to unravel the combined firm into its two original parts. They claim that advance notification won't hurt any firm except those attempting illegal mergers.

Opponents say that the bill, requiring notification if the combined assets of the firm are over $10 million, will place an almost impossible burden on the government—scanning all acquisitions of firms over that relatively small size. As a result, they argue, the government will in almost every case seek an injunction to block the merger to get more time to study the consequences.

Opponents also argue that the bill will be especially hard on the smaller firms which want to sell out for inheritance tax reasons, or the tottering firm which wants to sell out before having to go into bankruptcy because of the long delays which the measure will create.

But because of the uproar over the recent "wave of mergers," and the political issues of "big business," antitrust legislation is popular in Congress and Sen. Joseph C. O'Mahoney, who is pushing the bill in the Senate, is convinced it will pass this year.

Among the opponents of the measure at recent hearings was Russell B. Brown, General Counsel of the Independent Petroleum Association of America, who warned that the proposed bill would permit the government to over-reach the purposes of antitrust laws and restrict freedom of competition and normal business activity.

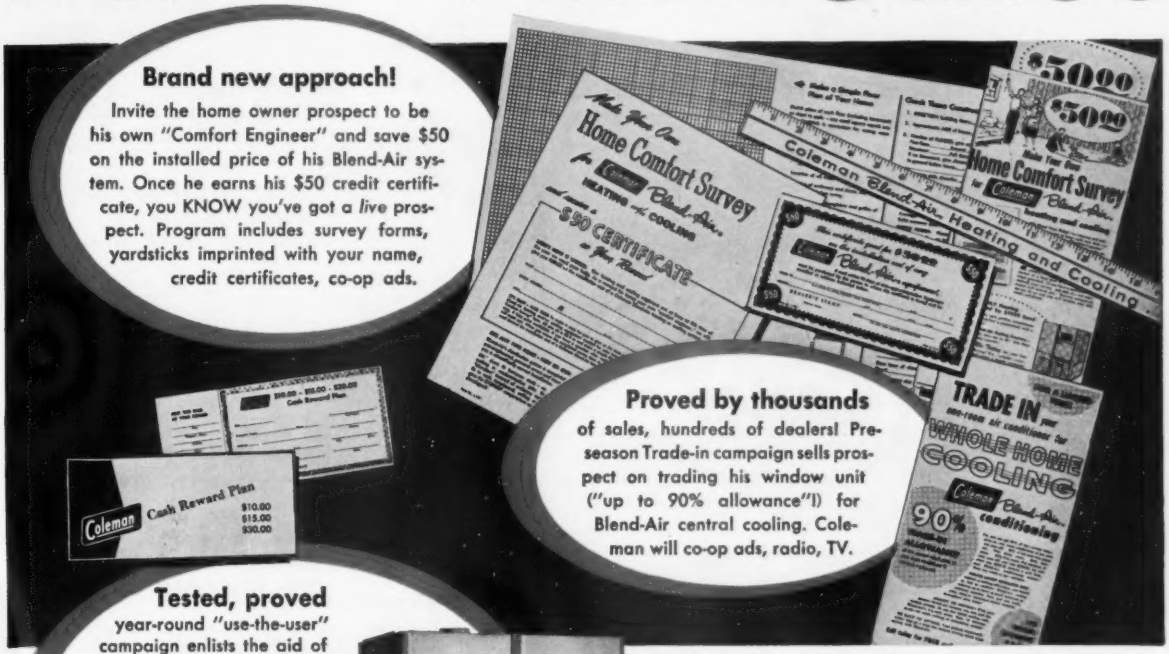
Neil Regeimbal, Correspondent.

Use these Coleman local promotions to BUILD A LIVE PROSPECT LIST

For HEATING/COOLING Sales

Brand new approach!

Invite the home owner prospect to be his own "Comfort Engineer" and save $50 on the installed price of his Blend-Air system. Once he earns his $50 credit certificate, you KNOW you've got a *live* prospect. Program includes survey forms, yardsticks imprinted with your name, credit certificates, co-op ads.



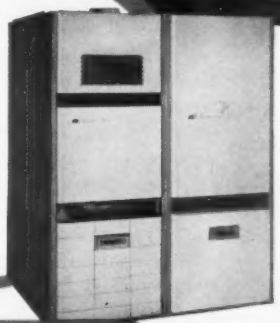
Proved by thousands

of sales, hundreds of dealers! Preseason Trade-in campaign sells prospect on trading his window unit ("up to 90% allowance"!) for Blend-Air central cooling. Coleman will co-op ads, radio, TV.

Tested, proved

year-round "use-the-user" campaign enlists the aid of satisfied Blend-Air customers and others in searching out new prospects.

plus . . . many other ideas, ads, displays and direct mail. Tie-ins with national advertising in LIFE, Saturday Evening Post, Sunset Household and Small Homes Guide.



Use Blend-Air EXCLUSIVES to close more sales!

• **ONLY COMPLETELY PACKAGED SYSTEM** . . . prefabricated at factory to reduce layout time, eliminate costly shop work. • **INSTALLS IN HALF THE TIME** — smaller 3½-inch ducts save labor and inventory. • **COMPLETE LINE** of Vertical and Plenum Coolers to install with *any* heating. • **BEST HUMIDITY CONTROL** with exclusive Coleman blenders. • **LOWEST COST COOLING** to operate with exclusive Air-Mist evaporative condenser.

COLEMAN *Vit-Rock*® *water heater...*

backed by 10-year warranty and EXCLUSIVE $500 Bond . . . strongest guarantee in the industry! Only Coleman has the rock lining that can't rust!

COLEMAN SINCE 1900 — makers of lamps, lanterns, camp stoves, home heating and air conditioning.

MAIL COUPON TODAY for complete information!

The Coleman Company, Inc.
Dept. BP-163, Wichita 1, Kansas

Gentlemen: Please send me complete information on Coleman Blend-Air cooling and the 1956 Coleman local promotions. I sell ☐ gas or LP-gas, ☐ oil heating equipment.

Name_____

Firm Name_____

Address_____

City_____ Zone_____

State_____

CALENDAR

Coming events in the Industry

All associations are invited to send in dates of their forthcoming meetings for this calendar.

July 2-3 — Wyoming LPGA Annual Meeting — Wort Hotel, Jackson, Wyo.

July 8-10—Tennessee LPGA Annual Convention — Look Out Mountain Hotel, Chattanooga, Tenn.

July 9-August 4 — Short Course in Gas Technology (2nd section) — North Carolina State College, Raleigh.

July 20-21 — South Carolina LPGA Convention, Charleston, S. C.

July 22-24 — Kentucky LPGA Convention and Trade Show—Phoenix Hotel, Lexington, Ky.

August 1-3—Central States L. P. Gas Service School—University of Kansas, Lawrence, Kan.

Aug. 5-7—Alabama L. P. Gas Association Convention — Dinkler-Tutwiler Hotel, Birmingham.

Aug. 5-7 — West Coast L. P. Gas Association Convention and Trade Show—Sheraton-Palace Hotel, San Francisco.

Aug. 19-21—New Mexico LPGA Annual Convention and Trade Show—Hilton Hotel, Albuquerque, N. M.

Sept. 16-18 — Ohio LPGA Annual Convention and Trade Show — Cleveland Hotel, Cleveland.

Sept. 14—Pennsylvania L. P. Gas Association Convention — Penn-Harris Hotel, Harrisburg, Pa.

Sept. 17-18—Virginia LPGA Annual State Convention—Ingleside Hotel, Staunton, Va.

Oct. 2-4—LPGA Management School —University of Wisconsin, Madison, Wisc.

Oct. 14-16—Oklahoma L. P. Gas Association Meeting — Skirvin Hotel, Oklahoma City.

Oct. 15-17—AGA Annual Convention —Auditorium, Atlantic City.

Oct. 29-30—Minnesota L. P. Gas Association Fall Convention — Leamington Hotel, Minneapolis.

1957

March 10-12—Indiana LPGA Trade Show and Convention — Claypool Hotel, Indianapolis, Ind.

Butane Propane

Carter

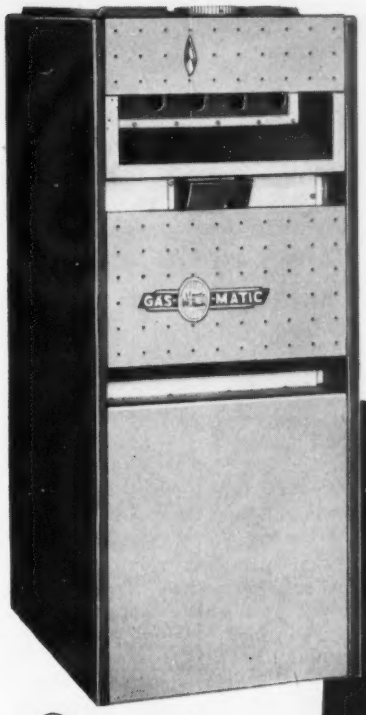
A name associated with the oil industry since Sisterville, West Virginia, in 1893 . . over 60 years of experience.

CARTER'S reputation for dependability, which has been earned during these years, is yours when you buy LP gas from Carter.

Call CARTER when you need Butane or Propane — for domestic or industrial purposes — and you call an unexcelled supplier, with unexcelled products.

THE CARTER OIL COMPANY
TULSA, OKLAHOMA

Another WILLIAMS Achievement for more LP Gas Sales



Model HG-90
All Models
A.G.A. Approved

NO BACKFIRE "POP" NO "WHISTLE" STOPS

Now! A *really quiet* LP gas furnace to build your heating sales and profits!

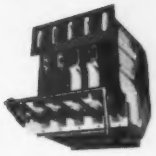
ALL-NEW 1956
EUREKA Williams
GAS-O-MATIC WARM AIR FURNACES
18 Lo-Boy, Hi-Boy, Counterflow and Suspended Models
67,500 to 180,000 BTU/hr.

Prove it to yourself

No backfire "POP"... no "WHISTLE" stops... smooth operation all the way! Let us *prove* it with the Williams LP demonstrator. We want *you* to put it through its paces. First, under normal operating conditions — then, with shutters closed... then wide open and with pressures ranging from *5 inches* to *18 inches* of water. You can even light the LP Gas with a torch at the shutters under any pressure conditions. Still you get no backfire "POP"... no "WHISTLE" stops. It's amazing! Other heating equipment just *can't come close* to this kind of performance. For full details and a demonstration of the quietest LP heating equipment on the market, simply fill in the coupon and mail it today.

See all these quality features!

- Easy-clean brown and beige baked enamel finish
- Whisper-quiet, cushion-mounted oversize blower
- Extra-large, high efficiency air filters
- Factory fire-tested, assembled and wired for low-cost installations
- Easily adjusted for perfect flame



NEW STRONGER SELLING FEATURES!

NEW EXCLUSIVE HEAT EXCHANGER. Compact, new heavy gauge steel sectional design assures maximum heat transfer. Individual inshot burner for each section means peak efficiency... quietest, low-cost operation.

SEALED IN STEEL from Top to Bottom means the cleanest heat ever! Only healthful, refreshing *filtered* air can pass through the heat exchanger into the home. A quality plus your prospects will recognize immediately!

Powerful new national advertising... generous co-op ad plan... and hard hitting local sales promotion materials give Williams Franchise Dealers high consumer acceptance — more sales punch for more profits.

Williams Is Really On The Move!

EUREKA Williams
OIL-O-MATIC
GAS-O-MATIC
AIR-O-MATIC

The oldest name in automatic heating

Eureka Williams Corporation, Dept. C-7
Bloomington, Illinois
Please arrange for me to see the LP gas demonstration. No obligation, of course.

Name_____

Address_____

City_____ State_____

"CALL-BACK CHARLIE?"

or "Complaint-Free Frank?"

Which one are you? If you've learned that you can install Metalbestos gas vent pipe and then forget it — you're "Complaint-Free Frank." If not, you'll recognize "Call-Back Charlie," who thinks he cuts cost by making single-wall vent pipe on the job . . . but actually loses time and money answering call-back complaints from moisture condensation, scorched walls and stale air.

"Complaint-Free Frank" is up-to-date . . . knows that double-wall Metalbestos is the pre-fab, scientific gas vent that combines correct vent design with quality materials and construction. And Frank's picking up some extra profits, too . . . because light-weight Metalbestos permits quick, one-man installation . . . lets Frank finish more jobs for good in fewer man-hours.

Metalbestos cuts costs without cutting corners

For the latest Metalbestos catalog, see your jobber or write Dept. M-7.

METALBESTOS DIVISION

Stocked by principal jobbers in major cities.
Factory warehouses in Atlanta, Akron, Dallas, Newark, Des Moines, Chicago, Los Angeles, New Orleans.

BPN associations

Safety Award presented to Harry E. Newell by LPGA

In recognition of a lifetime of service to safety, Harry E. Newell, veteran L. P. gas safety standards authority and insurance executive, was given a Distinguished Service Award and honorary life membership and the Seley Award, May 9, by the Liquefied Petroleum Gas Association. The presentation was made during the annual convention of LPGA at the Conrad Hilton hotel, Chicago.

The bottled gas industry's record for safe operations stems largely from the standards promoted by Mr. Newell in his 30-year term as chairman of the committee on gases of the National Fire Protection Association. He started his career in safety work in 1909 when he joined the National Board of Fire Underwriters as an engineer.

Some 20 years later the L. P. gas industry drew on Mr. Newell's experience and that of NFPA to help it draft a code of safe operations that would be recognized as the standard by fire departments and regulatory authorities throughout the country. The resulting work, now known as NFPA Pamphlet 58, has been revised almost yearly to reflect the increasing knowledge of L. P. gas in numerous new fields.

Mr. Newell is honorary chairman of NFPA's committee on gases, a title given him recently when he retired as assistant chief engineer of the National Board.

Alabama conducts Service and Carburetion Schools

The Alabama L. P. gas Service School held at the Regional State Vocational Trade School, Tuscaloosa, May 20-24 played host to 120 students.

The students were divided into four rotating groups because it was felt that small groups tend to create a personal interest.

Classes included: L. P. gas, What

Continued on page 85

ROCKWELL

ER-Series Oscillating Piston

LIQUID LPG METERING SYSTEM

We've made it easy and economical for you to get all the benefits of an LPG truck metering system. Now you can have a simple Rockwell ER-Series oscillating piston meter hooked up to a patented pressure loaded dispensing system that positively eliminates vapor and assures measurement of only liquids. This meter has fewer parts than others. Its accuracy and durability have been proved over many years.

EASY SCREW-TURN ADJUSTMENT

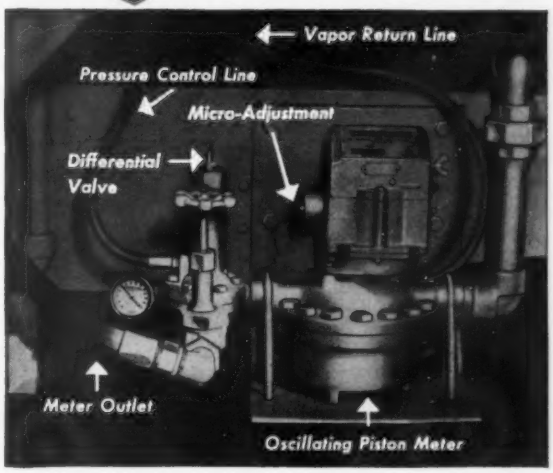
The Rockwell ER-Series meter has an *external micro-adjustment* that permits a wide range of calibration to extremely fine limits. You do this with the turn of a screw driver. *There's no need to dismantle the meter or to use change gears when adjusting for accuracy.* Get full facts now. See your nearby Rockwell jobber, district office or write for literature.

ROCKWELL
MANUFACTURING COMPANY

PITTSBURGH 8, PA. Atlanta Boston Charlotte Chicago Dallas Denver Houston Los Angeles Midland, Tex. New Orleans New York N. Kansas City Philadelphia Pittsburgh San Francisco Seattle Shreveport Tulsa In Canada: Rockwell Manufacturing Company of Canada, Ltd., Toronto, Ontario

EVERYTHING YOU NEED FOR ACCURATE TRUCK MEASUREMENT IN ONE EASY-TO-INSTALL PACKAGE

You can buy the Rockwell ER-Series metering unit in either 1" or 1½" size with a capacity of up to 70 gpm. The complete system includes meter, differential valve, check valves, strainer, service tees, elbow and connectors. An easy-to-follow installation diagram is furnished with each order.



For further information on items reviewed in this section use the convenient post-paid Readers' Service Cards on pages 83, 84

Wide variety of all-year units ready

WITH forecasts of a bright future for air conditioning originating from all quarters, appliance manufacturers have jumped into the market with both feet in a manner that has already established a highly competitive selling situation for them and a buyer's market for dealers and consumers. As a result, although the all-year air conditioning field is a relatively new one, dealers have a wide range of products, all with well-known names, from which to choose.

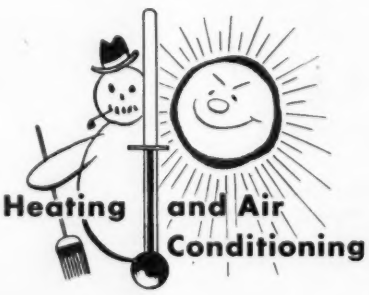
Since all manufacturers are busily promoting their units through major national advertising campaigns, however, consumers too are aware of the choices available, making selection of a line or lines more difficult for the L. P. gas dealer.

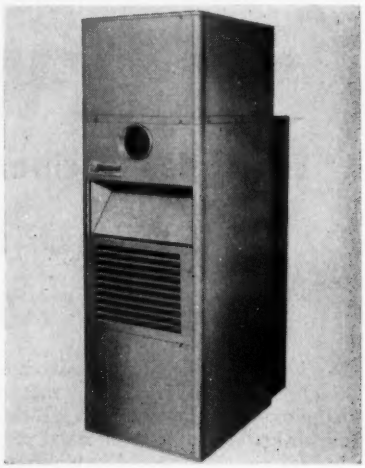
Year-around air conditioning comfort, combining heating and cooling with humidity control, ventilation and air circulation and filtration, is being provided by manufacturers through two types of central all-year systems.

No fewer than 16 manufacturers are offering all-year comfort conditioning including heating and cooling in one unit. In homes where no central heating plant exists or where a replacement is needed, or in new homes, the single unit provides one compact package which occupies a minimum of space and is operated through one set of controls.

In addition to the single unit, usually called an all-year or a year-around conditioner, almost all of the same manufacturers, plus many others, offer central cooling units which can be used in connection with an existing central heating plant and which utilizes the same duct system. Several manufacturers offer twin heating and cooling units with the advantage that the heating unit can be installed now and the matching cooling unit can be added when the customer can afford it.

Of the 16 residential all-year systems now on the market, only one is all-gas. The others all offer L. P. gas heating and electric cooling. At least six firms, however, and probably more, are currently working toward the development of all-gas units. Most of these manufacturers, however, believe that their all-gas models, which would be priced competitively with gas-electric models, will be several years in preparation before being placed on the market. ■





Janitrol

Model: Win-Sum-Matic

Description: Heating and cooling in one unit requiring as little as 4.5 sq ft of floor space. Completely automatic including switching from heating to cooling with flip of switch (optional thermostat changeover switch). Furnace with cooling cabinet can be acquired now, cooling unit added later. Blower and motor rubber cushioned. Air-cooled condensing unit with top air exhaust designed to operate with outside temperatures to 125° F. Heating and cooling unit cabinet hammertone finished in blue-gray enamel.

Other models: SRA air cooled "add on" cooling system can be adapted to most forced air heating systems to make an all-year system. Coils require no floor space, can be added to existing duct work. SAC water-

cooled conditioner is designed as a twin unit for the Janitrol furnace. SHW horizontal unit also water-cooled.

Janitrol Heating & Air Conditioning Division, Surface Combustion Corp.

Circle **1** *on Readers' Service Card*

■

Carrier

Model:
Year-Round Weathermakers

Description: Six combination sizes of compact heating and cooling units in a single package. For residential and commercial use.

Other models: Weathermakers, completely self-contained air conditioners for commercial and industrial applications, in six sizes. Complete line of large commercial and industrial air conditioning equipment is available.

Carrier Corp.

Circle **2** *on Readers' Service Card*

■

Temco

Two, three and five ton air-cooled air conditioning units are now available for use with Temco furnaces as all-year twin units.

Description: Air-cooled units can be readily adapted to existing furnace installations. Evaporators available for various types of installations. Temco furnaces are built with adequate blower capacity to handle air conditioning, but an air handling unit is available for use with furnaces not having adequate blowers. Temco furnaces feature high-temperature porcelain enamel finish on heat exchangers to protect against corrosion when furnaces are used in combination with air conditioning. Condensing units of cooling systems can be installed indoors or out. Self-lubricating blower is oversized for quiet operation while maintaining adequate air supply for cooling of the condenser.

Temco Inc.

Circle **3** *on Readers' Service Card*

■

Permaglas

Description: Year-around system combines heating and self-contained cooling in one unit. Sixteen models available in 100,000 to 160,000 Btu heating and two, three and five ton cooling. Vertical cooling unit also available for matching Permaglas Hi-Boy but will provide cooling with any warm air system. Two, three and five tons capacities. Both all year and individual cooling units are air or water-cooled. Horizontal cooling units, water-cooled, for adding to any ductwork system available in two and three ton sizes. Heating includes high temperature ceramic coating on heat exchanger for corrosion and rust control.

A. .O Smith Corp.

Circle **4** *on Readers' Service Card*

■

Rheem

Model: 3103 Year 'Rounder

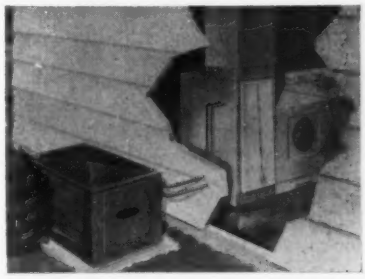
Single thermostat controlled heating and cooling. Changeover damper leaves control circuits energized during transfer. Water or air-cooled condenser. Wide selection of furnace and cooling capacities. Water-cooled circuits hermetically sealed for life. Five-year warranty.

Other models: 3150 summer air conditioner is a twin unit for Rheem warm air furnaces. Operated with a warm air furnace, it forms a year-around system. Models 3180E-200 and 3180E-300 can be added to new or existing forced air furnaces to give all-year air conditioning. Rheem's summer air conditioning is called "Rheemaire" and is claimed to have special features including: up to 95 per cent more cooling capacity than other units, an operating cost 30 to 40 per cent less than other units, bulk of system is located outdoors completely eliminating noise.

Rheem Manufacturing Co.

Circle **5** *on Readers' Service Card*

■



York-Shipley

Description: Twelve all-year air conditioners. Change from heating to cooling is made by turning changeover vane in front of unit. Automatic safety switch cuts burner out and prevents its operation during cooling cycle. Heating capacities of 85,000, 114,000 and 141,000 Btu available, each with two cooling capacities. Cooling coil is placed in air stream of the heating unit and condensers are air-cooled.

York-Shipley Inc.

Circle **6** *on Readers' Service Card*

■

Royal

Chattanooga Royal is announcing a completely new line of heating and cooling units for residential use. Summer air conditioning is accomplished by a remote unit which fits into the warm air supply duct of new or existing furnaces, converting the unit to an all-year comfort conditioning system.

Model: AC

Description: Air-cooled two and three ton units. Designed for easy installation by dealer. Refrigerant lines have quick disconnects for easy field connection. No charging or dehydration necessary. Special expansion valve meters refrigerant flow for greater humidity control. Heavy duty blower and motors.

Other models: Heating equipment

For further information on these products use Readers' Service Cards on pages 83, 84

includes model GC counterflow units, GH Hi-Boy units, GL Lo-Boy units and GS horizontal units. All heating equipment carries ten-year factory warranty. Scientifically designed steel heating elements, replaceable filter and centrifugal type, resilient mounted blowers.

Chattanooga Royal Co.

Circle **7** *on Readers' Service Card*

■

Worthington

Model: RGH 100

Description: Completely automatic heating and cooling with no dampers or levers to change or adjust. Requires 8.5 sq ft of floor space. Available in two and three ton cooling sizes with 80,000 Btu gas heating. Heat exchanger ceramically coated to prevent corrosion. Heating flame automatically adjusts to meet changing heat requirements. Entire cooling system mounted on single frame for easy access for inspection or installation. Cooling system is water-cooled, can be adapted for use with air-cooled condenser. Hermetically sealed compressor, five-year warranty. Completely-insulated beige cabinet.

Other models: Complete line of air conditioners for residential, commercial and industrial applications, including the SCYR "add-on" air conditioners for addition to existing heating system.

Worthington Corp.

Circle **8** *on Readers' Service Card*

■

Typhoon

Model: AGH 95 Weather-Selector

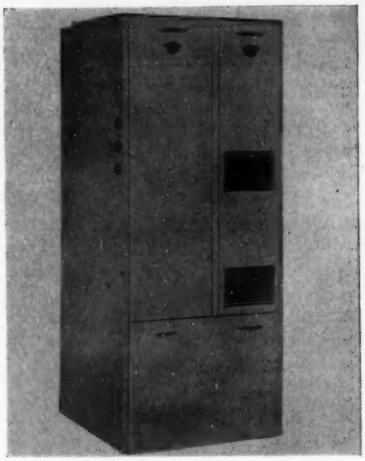
The Weather-Selector is a gas-fired furnace designed to accomodate a matching Typhoon cooling coil which may be placed on top when furnace is originally installed or at a later date.

Description: Single port, up-shot type burner. Variable-speed blower is rubber mounted. Three-ton air-cooled cooling, 76,000 Btu heating. Silver-toned brown enamel housing.

Typhoon Air Conditioning Co.

Circle **9** *on Readers' Service Card*

■



Utility Appliance

Models: HC 2075 and HC 3105

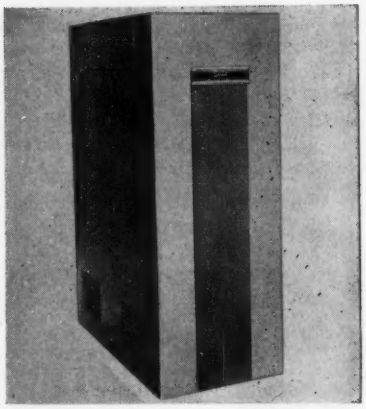
Two combination heating and cooling units. Model HC 2175 has two ton cooling, 75,000 Btu heating; model HC 3105 has three ton cooling, 105,000 Btu heating.

Description: Features fingertip control, thermostat switch changes unit from heating to cooling. No dampers nor damper motors required. Refrigeration chassis resiliently mounted to prevent vibration from being transmitted to the cabinet. Refrigeration chassis packaged separately and can be installed in cabinet at time of purchase or at later date. Refrigerant system is hermetically sealed. Uses oversized counterflow tube-in-tube condenser. Entire two-tone green cabinet is insulated. Five-year written warranty. Uses 230 volt single-phase or 208/220 volt triple-phase 60 cycle current.

Other models: Single and double evaporator coil air cooled air conditioners for addition to existing upright, horizontal or counterflow furnaces or into existing ductwork.

Utility Appliance Corp.

Circle **10** *on Readers' Service Card*



Servel

Models: Three All-Year—
EB-72-G, DC and DE.

This is the only firm which offers all-gas residential all year air conditioning. All three models have gas heating and gas cooling.

Description: A flick of the thermostat switch changes system from heating to cooling. Cooling mechanism operates on principle of absorption, therefore requires no moving parts. Uses heat for cooling and water as the refrigerant. All major parts and interconnecting tubing are factory assembled as a hermetically sealed unit. No compressors, no motors. Heating is by indirect steam heat, providing normal variation of ½°. Burners operate at full or partial capacity, filters are double thick and disposable. Model EB-72-G is designed for a small home, provides two ton cooling, 72,000 Btu heating. Model DC has 3.3 ton cooling, 96,000 Btu heating. Model DE offers 5.4 ton cooling and 96,000 or 144,000 Btu heating. Five-year factory warranty offered.

Servel Inc.,
Air Conditioning Division

Circle **11** *on Readers' Service Card*

■

Armstrong

Air or water-cooled summer air conditioner companion models for Armstrong furnaces which combine to make an all-year system are available in two, three and five ton capacities. Entire refrigeration system hermetically sealed, five year warranty. Remote cooling units, available in two, three and five ton capacities, are air-cooled. Water-cooled horizontal units available in two and three ton capacity. Full line of heat-

For further information on these products use Readers' Service Cards on pages 83, 84

ing equipment as companion unit to vertical coolers or for use with horizontal and remote units.

Armstrong Furnace Co.

Circle **12** *on Readers' Service Card*

■

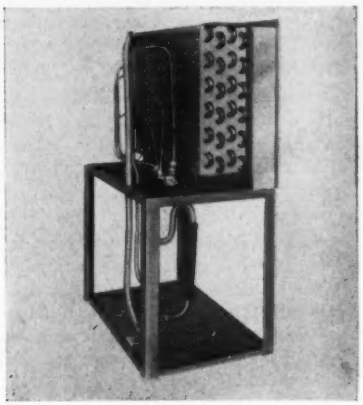
General Electric

Description: Self-contained central all-year heating and cooling units. Cooling capacities two to five tons, gas-fired heating capacities of 60,000 to 210,000 Btu input.

General Electric Corp.

Circle **13** *on Readers' Service Card*

■



American-Standard

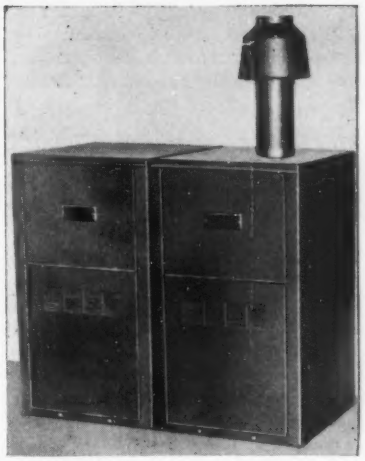
Model: C-G-AC Year 'Round

Description: Combination heating and cooling with slide-out evaporator unit which may be purchased separately, if desired, for later installation. Uses outdoor, air-cooled, condensing unit. Has 2 hp cooling with gas-fired heating in capacities of 75,000 100,000, 125,000 and 150,000 Btu input or 3 hp cooling with 100,000 125,000 and 150,000 Btu input. Available in 230 volt, 60 cycle, single phase or 208/220 volt, 60 cycle, triple phase current. Has combination heating-cooling thermostat, built-in manually operated changeover damper. Motor-driven damper optional. Expansion valve has thermally-aged diaphragm to withstand high temperatures maintained during the heating season.

Other models: Eight water-cooled and six air-cooled residential air conditioners are available for connection to existing furnace systems. Two water-cooled commercial cooling units are made. All cooling units have 100 per cent hermetically sealed refrigeration units.

American-Standard
Air Conditioning Division

Circle **14** *on Readers' Service Card*



Hydrotherm

Model: Wet-Package

Purpose: To be used for year-round conditioning in conjunction with forced convectors and baseboard systems in the home.

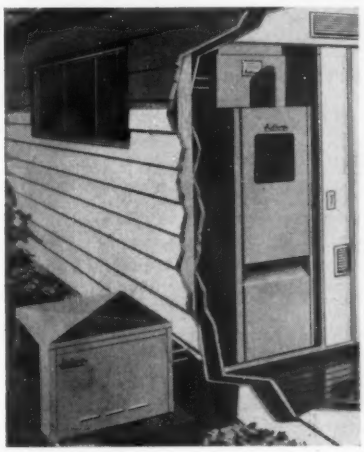
Description: The twin units require a floor space of only 21 in. by 42 in. and stand 36 in. high. The gas-fired boiler is complete in its cabinet with circulator and fill and relief valves. Heating capacities range from 45,000 Btu/hr to 150,000 Btu/hr input. The water chiller, complete within the jacket, can be 2 or 3 tons.

Easy access is provided for service and installation at the rear of the unit.

Hydrotherm Inc.

Circle **15** *on Readers' Service Card*

■



Airtemp

A versatile line of summer air conditioning units is offered which can be added to new or existing Airtemp furnaces to comprise an all-year system.

Description: Four sizes of air-cooled condensing units are available to fit all sizes of homes from the smallest to the largest. Water-cooled condensers also available Eleven models of cooling coils to meet requirements of Spacesaver, horizontal or counterflow furnaces. Coils are double-faced for maximum cooling capacity. Entire refrigeration system has five-year warranty. Spacesaver furnaces available in Hi-Boy models with 67,000 to 120,000 Btu output and Lo-Boy models with 80,000 to 210,000 Btu. Cooling coil case fits on top allowing ducting from all directions. Coil case fits on bottom of counterflow furnaces which have heating capacities from 65,000 to 100,000 Btu. Horizontal furnaces provide 48,000 to 112,000 Btu, special coil case fits in line.

Airtemp Division, Chrysler Corp.

Circle **16** *on Readers' Service Card*

■

Bryant

Model: 590 Home Air Conditioner

Designed as a twin unit to the Bryant furnace line. When used in combination with a gas-fired furnace such as the "319," the cooling and heating units become the "Command-Aire" Twins, a year-round air conditioning system.

Description: The compact cooling unit provides completely automatic summer air conditioning. Water-cooled, designed to reduce water requirements. High capacity, low speed blower is rubber cushioned. Two and three ton units offer fully hermetic compressor, five ton unit has semi-hermetic type. Both types spring mounted. Both the winter and summer units can be operated from a single thermostat with finger tip heating or cooling selection. Two and

three ton units equipped for city water, well water or cooling tower operation only. Single phase 60 cycle units uses 230 volts, triple phase uses 220 volts.

Bryant Division, Carrier Corp.

*Circle **17** on Readers' Service Card*

■

Westinghouse

Model: RG/RO

Year-Round Air Conditioners

Description: Combines gas-fired furnace with cooling unit in one cabinet for heating and cooling. Slip-in cooling unit can be added at future date if desired. Automatic thermostatic year-round control. Available in two or three ton cooling capacities, 72,000 and 104,000 Btu gas heating.

Other models: ACU air-cooled condensing units designed for residential cooling with new or existing forced air furnaces. May be installed remote from the furnace—indoors or outdoors—with cooling coil in furnace discharge duct. Provides interlocking of thermostat, furnace and condensing unit for automatic year-round control. Available in two, three and five ton capacities. Also available are type RU Unitaire conditioners providing water-cooled cooling for addition to existing or new furnaces.

Westinghouse Eelectric Corp., Air Conditioning Div.

*Circle **18** on Readers' Service Card*

■

Norman

Description: Winter-summer horizontal year-round air conditioner combines a Norman duct furnace with independent cooling and blower assembly in one package. Damper compartment operated by single thermostatic control. Cooling only available in separate package for existing furnace. Cooling capacities are two and three tons, heating capacities are 70-85-100-120-140 Btu input.

Norman Products Co.

*Circle **19** on Readers' Service Card*

■

Luxaire

Description: Five models of year-around air conditioning units complete in one cabinet. Basement-utility models include two ton cooling and 100,000 Btu input heating air or water-cooled, three ton-140,000 Btu air or water-cooled, and five ton-175,000 or 140,000 Btu water-cooled. Counterflow year-around units are two ton-100,000 Btu air or water cooled and three ton-140,000 Btu air cooled only.

C. A. Olsen Manufacturing Co.

*Circle **20** on Readers' Service Card*

■

Domestic range

The 1956 Brown "Sound Value" gas ranges are made in two sizes, one 30 in. wide and the other 36 in.

Model: U 307-1EHWZ—30 in.

Description: This model is designed specially for the homemaker who wants deluxe features in a giant oven range of width narrower than standard. It has a copper escutcheon with concealed venting, electric clock with 4-hr timer, lamp, convenience outlets, chrome top, instant top burner ignition, Hi-Lo click valves and black and copper control knobs.

Specifications: Oven, 23 x 16½ x 13 in.; broiler, 18 x 14 x 5 in.; cooking top, 30 x 22 in.; height of cooking top, 36 in.; floor space, 30 x 25 in.; shipping weight, 245 lb.

Brown Stove Works Inc.

*Circle **21** on Readers' Service Card*

Domestic range

Two new series of 36-in gas ranges are included in the 1956 line recently announced by the Geo. D. Roper Corp. These are the "Super Deluxe" and "Deluxe."

Description: "Tem-Trol," the automatic controlled-heat top burner, is available in all 36-in. Roper series: Tem-Trol accurately maintains any preset heat, ending the danger of burning and boil-over.

Two cooking tops are available on these ranges. The griddle top adds a surface griddle to the normal four burners. The griddle cover also serves as a splash back, a cookie sheet or work tray. Second top burner choice is the "Divided" top, with work area in the center.

"Insta-Lite" automatic ignition of top burners, oven and broiler offers dependable lighting at a minimum cost of fuel. The system utilizes a tiny "needle-point" of flame to avoid heating up exterior range surfaces.

Geo. D. Roper Co.

*Circle **22** on Readers' Service Card*

■

Rust check spray

A rust preventive spray for use on tools, molds, dies, instruments, nested metal parts and machinery is offered by Eastern Aerosol Products.

Description: Known as "Rust Chek" the new compound is packaged in a 12-oz aerosol spray container. A can provides approximately 80 sq ft of coverage in the form of a clear, dry waxy film to a thickness of .0005. Except in the case of use on precision instruments where critical tolerances are to be held, the film need not be removed when the protected tool, mold, machinery, etc., is removed from storage or tool crib and readied for use. The film is worked off in the using.

Eastern Aerosol Products

*Circle **23** on Readers' Service Card*

FOR MORE INFORMATION
about New Products in this issue . . .

use these time-saving

READERS' SERVICE CARDS

Each New Product or Trade Literature item reviewed in this issue is numbered. To get further information about items that interest you, circle the corresponding numbers on the Readers' Service Card below; then PRINT your name, title, company and address plainly and drop the card in the mails (no postage is needed).

BPN will take it from there and ask the manufacturer to send you, promptly, the data you want.

Circle the Item Number here

PRINT plainly to insure quick delivery

Please send me further information about the items circled below:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

NAME (Please Print) _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY & STATE _____

July 1956

* *This card will be void and should not be mailed after 90 days from date of issue.*

Postage Will Be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD

First Class Permit No. 6955, Sec. 34.9 P. L. & R., Los Angeles, California

BUTANE-PROPANE NEWS
198 SOUTH ALVARADO ST.
LOS ANGELES 57, CALIF.

KEEP UP WITH WHAT'S NEW

in Products, Literature and Service

use these time-saving

READERS' SERVICE CARDS

Each New Product or Trade Literature item reviewed in this issue is numbered. To get further information about items that interest you, circle the corresponding numbers on the Readers' Service Card below; then PRINT your name, title, company and address plainly and drop the card in the mails (no postage is needed).

BPN will take it from there and ask the manufacturer to send you, promptly, the data you want.

Postage Will Be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD

First Class Permit No. 6955, Sec. 34.9 P. L. & R., Los Angeles, California

BUTANE-PROPANE NEWS
198 SOUTH ALVARADO ST.
LOS ANGELES 57, CALIF.

Please send me further information about the items circled below:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

Circle the Item Number here

NAME (Please Print) _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY & STATE _____

PRINT plainly to insure quick delivery

July 1956

• *This card will be void and should not be mailed after 90 days from date of issue.*

Continued from page 76

and Why?; Electric and Magnetic Heating Controls; Heating and Range Controls; Venting; Transfer of Liquids; Regulators and Piping; Fire Extinguishers, Typers, Use, Care and Demonstration; General Safety; Highway Safety, and Hazards of Static Electricity.

The classes were conducted on an informal basis with time out for any and all questions. The instructors allowed the men to work with their hands as much as possible on the equipment. A typical example was the class on controls.

Each student was given a control to work on as the instructors explained the mechanism. Possible trouble was pointed out to the men with a set of controls.

According to James L. Deupree, executive secretary of the association, the dealers all appreciate the role that the servicemen play in the butane business and have been very pleased with the results.

One dealer pointed out that before his men started attending the schools, they would always sell a customer a set of controls when the control started giving trouble. Now his men are able to repair or correct the trouble in 90% of the cases. He very seldom sells a set of controls and at the same time is able to save his customer money.

The increasing demand in Alabama for L. P. gas carburetion for tractors caused the Association to hold a separate school. The school was held at Alabama Polytechnic Institution, Auburn, June 3-5. It was also a practical school; use was made of the Institute's engineering lab which had equipment already set up. Engines were converted, and tractors were brought in to be used for demonstration purposes.

Classes included: Basic Engine Theory, Ignition and High Compression, Vaporizers and Carburetion Maintenance — J&S, Algas, Ensign and Century, Tuning and Adjusting, Advantages of LPG Fuel, Trouble Shooting, Safe Handling and Transfer of LPG, Dynamometer, and Instruments.

The school was set up on the same basis as the L.P. gas Service School. The students were divided into four rotating groups, but due to the limited number the school could handle, only 100 students were able to attend. The carburetion committee has started thinking of another school for next year which will be designed to take care of approximately 200 students and possibly a four or five day school.

Society of Ancient Gassers presents service awards

Two veteran members of the L. P. gas industry receiving the Seley fellowship awards from the Society of Ancient Gassers were Franklin R. Fetherston and A. C. Maynard. The awards, gold wrist watches, were presented by Gassers President Paul Shannon, Standard Oil Co., California, at the Society's annual meeting May 6, during the annual LPGA convention in Chicago.

F. R. Fetherston
LPGA vice pres.

A. C. Maynard
Shell Oil

The award is to be given annually by the Gassers to the industry member who, in the members' opinion, has been outstanding in fellowship and service to the industry and his community. The awards were donated by Louis E. and Simon Seley, themselves veteran L. P. gas operators of New Hyde Park, N. Y.

Mr. Fetherston, winner for 1955, is a vice president of LPGA and for many years was the group's secretary-treasurer, having been the first executive office appointed by LPGA upon its organization.

Mr. Maynard, the 1956 winner, has retired from Shell Oil Co. Prior to that time he headed L. P. gas activity on the Pacific Coast for that company. He is now an L. P. gas consultant residing at Sausalito, Calif.

The Gassers elected E. L. Mills, Bastian-Blessing Co., chairman; J. W. Martin, Shamrock Oil & Gas Corp., Amarillo, Texas, vice chairman; and C. F. Dexheimer, Shell Oil Co., New York, secretary. Norman A. Evans, Pressed Steel Tank Co., Milwaukee, Wisc., continues as treasurer.

Puryear elected president of SGA

Southern Gas Association members closed the biggest convention in SGA's 48-year history in Dallas, April 25, with the election of Richard A. Puryear Jr., Birmingham, Ala., as president.

For the first time, registration of delegates topped the 2000 mark, the total reaching 2035.

Convention speakers stressed the amazing growth of America, both in population and in industry, as offering a fertile field for expansion of the gas industry. But they cautioned against confusing growth—the normal growth the gas industry would make to keep up with the increase in population—with expansion and progress.

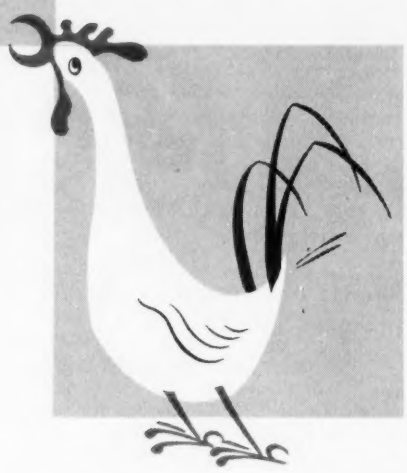
The need for a sound, united program of public relations to bring home to the public the service the national gas industry performs was also stressed.

Dean Lawrence C. Lockley of the school of commerce of the University of Southern California, who has gained a national reputation as a market analyst, told the SGA delegates there is no such thing as market saturation in our present economic system.

W. F. Rockwell Jr., Pittsburgh,

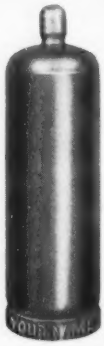
Discussing the program during the 1956 Indiana LPGA convention and trade show at the Claypool Hotel, Indianapolis, are left to right: Phil Hedback, Bryant Hedback Co., secretary-treasurer; Owen Wissing, Protane Corp., program chairman; and Ralph Martin, Martin's Gas & Appliance Co., convention chairman.

Growing?



you bet we are!

We are proud of our fine record of service . . . our rapidly growing roster of satisfied customers. You see, manufacturing top quality *Lee* LP Gas Cylinders is our only interest . . . conducting our business to please our customers, our biggest aim.



You can depend on Steel Cooperage for the finest cylinders and tops in service.

Complete Line of LP Gas Cylinders 20 to 420 Lb.

Financing Available . . . Call or Write Today!

STEEL COOPERAGE DIVISION

(The Serrick Corporation)

4801 BELLEVUE • DETROIT 7, MICHIGAN • WAlnut 5-3430

president of GAMA reminded the delegates that opportunity is not a quirk of fate which must be seized upon at a precise moment. Instead, it is a tangible, factual and ever-present factor which must be recognized or created, and then implemented.

Complementing Mr. Rockwell's talk, was the report from Dean H. Mitchell, Hammond, Ind., president of AGA. He cited the natural gas industry's amazing growth from 1945 to 1955.

Advice on public relations came from Henry Obermeyer, administrative vice president of Bozell & Jac-

---

Although several weeks have passed since the excitement of the 1956 silver anniversary convention of the Liquefied Petroleum Gas Association in Chicago, convention highlights are still high on the list of conversation topics for LPGA members from coast-to-coast. Seven scenes from the convention are shown on the right. (1) The Perfection Industries' exhibit was one of 250 which sparked the trade show at the convention's Conrad Hilton hotel headquarters. L. P. Gas Twins, Miss Butane and Miss Propane, are shown visiting the booth. (2) Past LPGA President C. J. McAllister pins a convention badge on new president K. H. Dickson while A. E. Bone, left, new second vice president, and Talmadge Lovelady, new first vice president, look on. (3) W. J. Montgomery, Beals Advertising Agency, Oklahoma City, speaks at the state association presidents' breakfast. Looking on are R. H. Mahnke and Ed Dovenberg. (4) Thirteen past presidents of the LPGA pose with motion picture star and convention speaker Pat O'Brien. Sitting for the picture are, back row, (left to right) F. N. Mabee, Denver, Colo.; W. R. Sidenfaden, Suburban Gas Service Inc., Upland, Calif.; M. L. Trotter, Carolina Butane Gas Co., Columbia, So. Carolina; C. J. McAllister, Parlett Gas Co., Waldorf, Md.; G. W. Bach, Vapotane Corp., Kansas City, Kans.; S. G. Darling, Darlingas Co., Pratt, Kans.; W. S. Lander, Southern Business Brokers, Charlotte, North Carolina. Front row: J. W. Martin, Shamrock Oil & Gas Corp., Amarillo, Texas; W. F. Verkamp, The Verkamp Corp., Cincinnati, Ohio; Mark Anton, Suburban Propane Gas Corp., Whippany, N. J.; Pat O'Brien; H. E. Thomas, H. Emerson Thomas & Associates, Westfield, N. J.; K. H. Koach, Green's Fuel Inc., Sarasota, Fla; P. A. Anderson, Cargo Guard Co., Portland, Maine. (5) H. E. Thomas presents the Seley award to winner Harry E. Newell. (6) Leaders of the Society of Ancient Gassers stop to chat during the convention. Shown, (left to right) are Vice Chairman J. W. Martin, Chairman E. L. Mills, Past Chairman Paul Shannon and Secretary C. F. Dexheimer. (7) Eugene Schrage, Charles City All-Gas Co., Charles City, Iowa, stands as he addresses a meeting of the LPGA load balancing division. The convention was hailed as a huge success.

Highlights from the LPGA convention

1

2

3

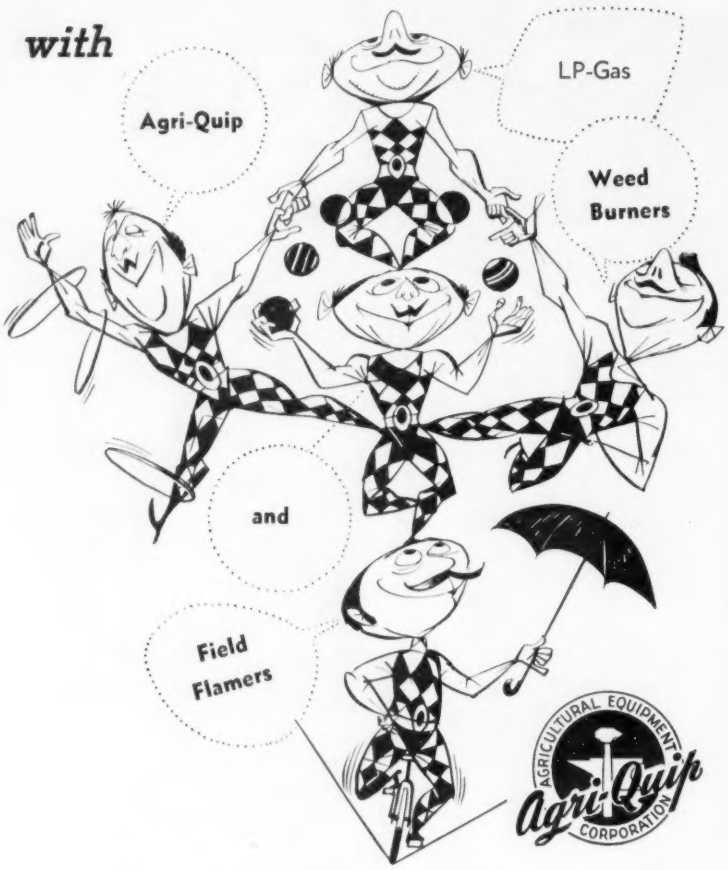
4

5

6

7

Balance Your Summer Load



Weed Control and Field Flaming offer unlimited opportunities for the LPG Dealer. Authorities rate them as the most rapidly expanding segment of the LP-Gas Industry. There are many reasons for this rapid growth . . . water conservation and soil erosion control are becoming increasingly important . . . farming costs are reduced . . . yields are increased and crop quality upgraded . . . and, the alert LPG Dealer sees in Weed Burning and Field Flaming an opportunity to render his customers a real service and at the same time win another round against that old bugaboo "Summer Load Slump". The proposed Soil Bank Program, creating additional idle land, will also create a greater need for economical and practical Weed Control.

GET IN THE ACT . . .

Write today for full information on Agri-Quip Weed Burners and Field Flamers . . . learn first hand what they can do for you and your agricultural customers.

AGRICULTURAL EQUIPMENT CORPORATION
Box 200 H **La Junta, Colorado**

Pioneer Manufacturers of LP-Gas Burners for Agricultural and Industrial applications

obs Inc., New York, and long-time leader in gas industry advertising programs.

SGA's retiring president, J. H. Collins Sr., New Orleans, pointed up the industrial growth of the South as creating an especially attractive market.

C. S. Stackpole of New York, managing director of AGA, approached the expansion challenge from still another angle.

AHLMA holds summer meet in Chicago, June 14-16

The annual summer meeting of the American Home Laundry Manufacturers' Association was held in the Edgewater Beach Hotel, Chicago, June 14-16.

Guest speakers at the Friday morning business session included Earl W. Kintner, general counsel, Federal Trade Commission, on "Recent Trends in Trade Regulations," and Jack Lane, associate editor, special projects, *Advertising Age*, on home laundry appliance merchandising. Other subjects and speakers on the Friday morning program were "Washington in the 1956 Election Year," George P. Lamb, AHLMA's general counsel; the "President's Report" by AHLMA President B. J. Hank and the "Executive Director's Report."

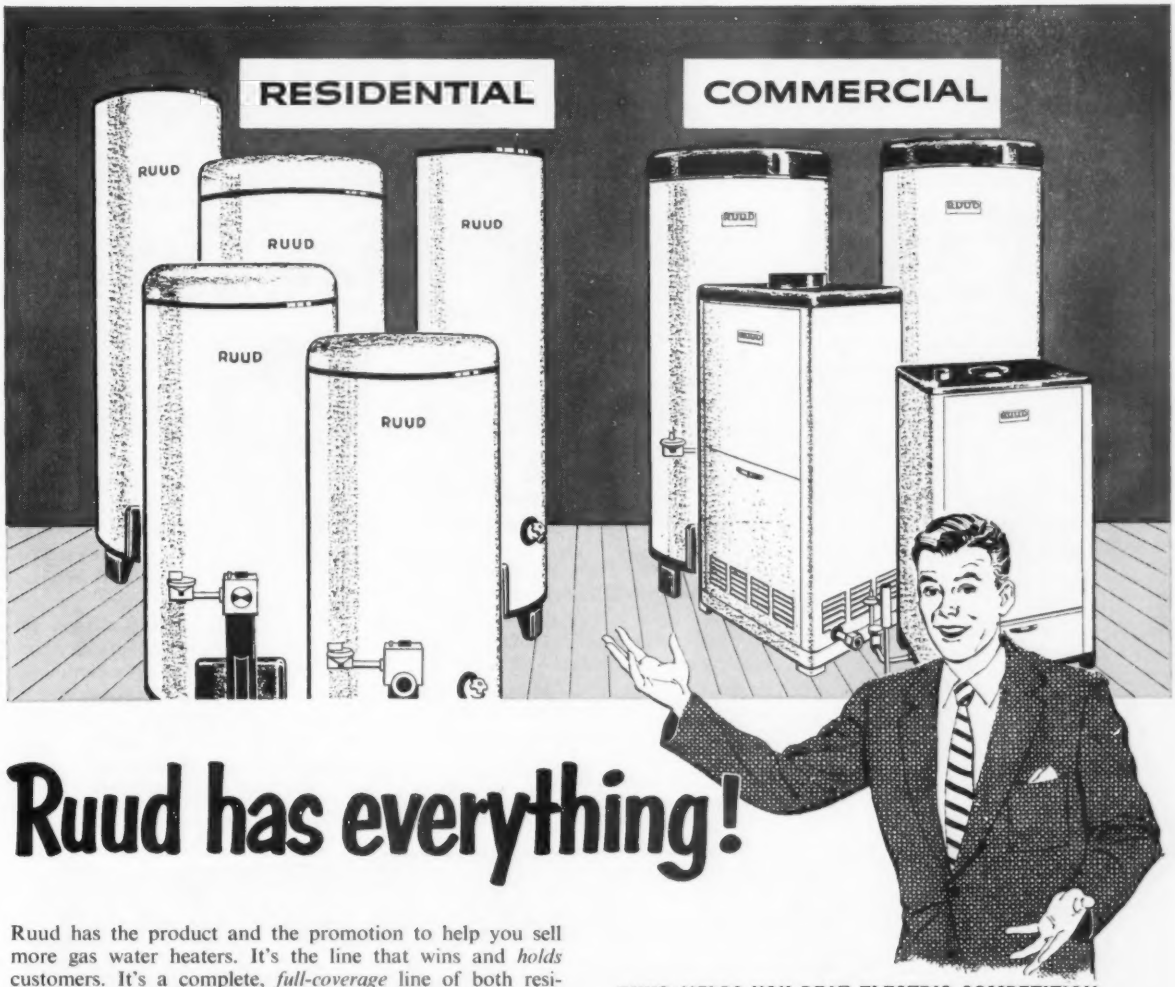
Dr. Philip M. Hauser of the University of Chicago, reported on "Population and Boom Market Ahead" at the Friday luncheon.

During the Saturday morning business session, topics discussed were appliance finishes, industrial relations programs and consumer durable demand. Saturday morning speakers included Dr. Roy B. Davis, E. I. duPont de Nemours & Co. Inc.; R. J. Sargent, Westinghouse Electric Corp.; Nathan W. Shefferman, Labor Relations Associates of Chicago Inc., and Arthur Rosenbaum, Sears, Roebuck & Co.

Dispositions improve!

Dispositions of husbands living in an air conditioned village in Austin, Texas, improved under the influence of air conditioning, say their wives.

National Warm Air Association reports that psychological researchers, who uncovered this fact, say this may be true —but it's also *possible that air conditioning made housewives a bit more kindly disposed toward their husbands.*



Ruud has everything!

Ruud has the product and the promotion to help you sell more gas water heaters. It's the line that wins and *holds* customers. It's a complete, *full-coverage* line of both residential and commercial water heaters. One line to learn, stock, advertise, promote and sell. One complete line for a simplified, streamlined water heater program that will do the *big* job for you.

Ruud has water heaters of all types, sizes and prices . . . for all gases, water conditions and hot water demands. Models with Enameline ("glass-lined"), Monel or Alcoa® Alloy non-ferrous, rust-proof, long-life storage tanks. Ruud Laundry-Rated* models to match the demand of any automatic clothes-washer made. Models with greater gas input to deliver greater hot water output, so necessary for modern home needs—and all this without increased tank size.

Ruud has two-temperature water heaters for residential use that simultaneously provide 180° water for the automatic clothes-washer and dish-washer—125° water for other household needs. Water heaters for commercial use that simultaneously provide 180° water for dish-washers and 140° water for other general-purpose demands.

All these are RUUD—the magic selling word in automatic GAS Water Heaters.

*Trademark

® Aluminum Co. of America

RUUD GAS WATER HEATERS

Kalamazoo 24, Michigan • Toronto 14, Ontario

RUUD HELPS YOU BEAT ELECTRIC COMPETITION

The "*Ruud-has-everything*" line keeps you 'way ahead of the fast-moving electric industry and its new models with their stepped-up performance. A Ruud customer is a satisfied customer. He gives you more take-home and keep-home profit. The money he spends for hot water supply is *yours*. He's beyond the reach of your electric competitor . . . *safe* in your bank account!

Mail the coupon so your Ruud representative can show you the big, new Ruud *Full-Coverage* Portfolio.

Get the new, big Ruud story. Fill out and mail the coupon below—today!

MAIL THIS COUPON TODAY

RUUD MANUFACTURING COMPANY
2025 Factory Street, Kalamazoo 24, Michigan—B-5

☐ Send me further information on the new "*Ruud-has-everything*" line.

☐ Have a Ruud representative show me the new Ruud *Full-Coverage* Portfolio.

NAME _____ POSITION _____

BUSINESS NAME _____

BUSINESS ADDRESS _____

CITY _____ ZONE _____ STATE _____

BPN THE TRADE

Bryant makes two appointments in the sales field

Bob McElwain has been appointed southeast regional sales manager for Bryant, producer of home heating and cooling equipment, it has been announced by Howard L. Clary, Bryant director of sales. Mr. McElwain has his headquarters in Atlanta.

Mr. McElwain's business experience includes five years as district sales manager for A. O. Smith in St. Louis and three years as sales manager of the "Quick Heat" division of Sinclair Refining Co. in St. Louis.

Also, Robert R. Good has been named regional representative for Bryant, in the company's southwest territory.

Mr. Good has wide experience in Dallas and throughout the Southwest. He was regional representative in the construction market for Reynolds Metals in both the Dallas and Detroit areas for five years.

Norge appoints two regional home service directors

Norge has announced the appointments of Miss Fran Osborne and Miss Sandy Healy as home appliance regional directors.

Miss Osborne will work with 14 Norge distributor home economists in Little Rock, Ark.; Dallas, San Antonio, Houston, Amarillo, and El Paso, Texas; Jackson, Miss., Albuquerque and Silver City, N. M.; Oklahoma City; Wichita, Kan. Memphis, Tenn.; Shreveport, La.; and Denver, according to Mrs. Jessie Cartwright, Norge home service director.

Mrs. Cartwright also stated that Miss Healy will work with home economists of Norge distributors in Boston, and Springfield, Mass.; Portland, Maine; Providence, R. I.; White River Junction, Vt.; Albany, Poughkeepsie, Buffalo, Rochester, and Syracuse, N. Y.; Hartford, and New Haven, Conn.; and Erie, Pa.

Prior to joining Norge, both Miss Osborne and Miss Healy were home economists for the Monsanto Chemical Co.

Gregg Edelheit is the newly appointed Norge regional manager for metropolitan New York and northern New Jersey. He has been associated with home appliance distributors in the New York City area for the past nine years.

Bate named field engineer for Weatherhead Co.

E. R. Bate

An experienced sales engineer from San Francisco has been named field engineer in the northwest section of the United States by the Weatherhead Co.'s Ft. Wayne division.

Edward R. Bate was named to the position by John Allen, sales manager of the industrial distribution division which Mr. Bate will represent in an area that includes Oregon, Idaho, Wyoming, Montana, Washington, Colorado, Utah, northern Nevada, north-

MUTUAL B-91 and SCOOTER OPEN NEW MARKET for LP-GAS SALES!

Flooring Mechanics Choose Propane When They See Mutual Torches in Action!

The Mutual Line of LP-Gas Torches brings to the Flooring Trade an improved method of making "Hot-Cuts." Wherever Mutual Torches have been introduced, flooring mechanics are changing to LP-Gas for the heating of asphalt tile and linoleum. They find their jobs are made easier, faster, cleaner and less hazardous with this modern equipment. Profit now by presenting Mutual LP-Gas Torches to the flooring mechanics in your sales area.

COMPLETE INFORMATION is now available in new brochures. Write for your copies.

New mobile Scooter is perfect for the big jobs. Cap. — 5 lbs. Add hose and torch for linoleum.

Mutual B-91 Hand Torch. Handy for both tile and linoleum. Holds .91 lbs.

Mutual LIQUID GAS EQUIPMENT CO., Inc.
17129 SOUTH BROADWAY, GARDENA, CALIF.

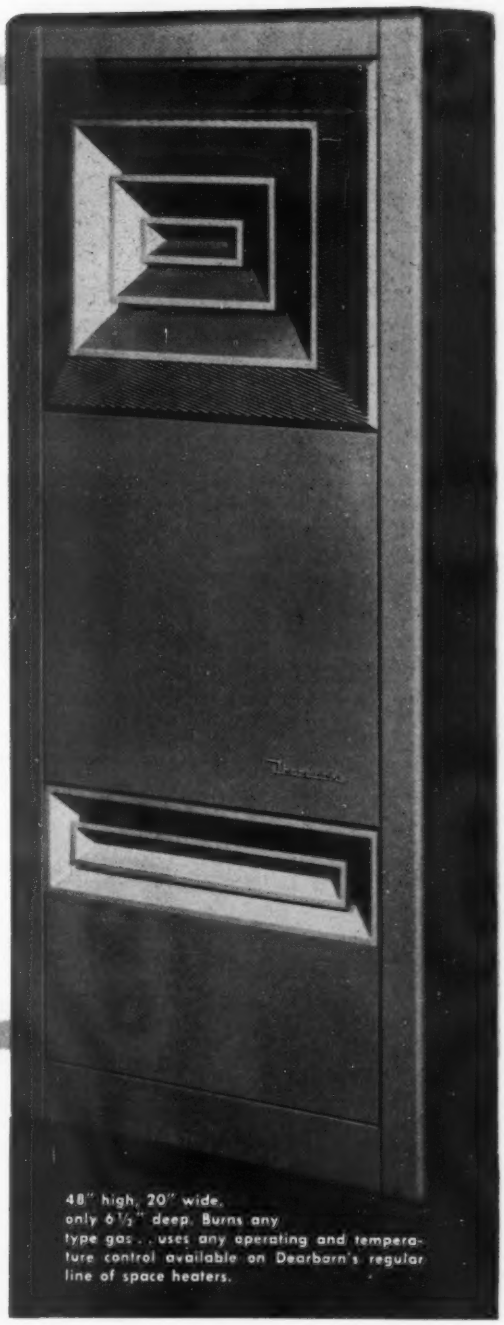
Dearborn PROUDLY PRESENTS ITS *all-new* UNVENTED WALL HEATER

Designed by Dearborn . . manufactured by Dearborn . . with the built-in Dearborn quality you have known for years, this all-new UNVENTED wall heater has features you can sell because it has the features your customers want!

You Can Sell . . .

- Quick, simple installation – it hangs *on* the wall
- Safety and convenience of its Cool Safety Cabinet
- Specially designed, super-efficient burner
- Fully visible flame
- Comfort-making forward heat flow
- Completely enclosed controls – *more* safety by Dearborn
- Combustion chamber and baffles made of Black Beauty steel
- Beautiful styling – finished in smart Dearborn coppertone
- Takes *no* floor space – little wall space
- Competitively priced

SEND TODAY FOR ADDITIONAL INFORMATION ON THIS NEW DEARBORN PROFIT-MAKER



48" high, 20" wide, only 6½" deep. Burns any type gas . . uses any operating and temperature control available on Dearborn's regular line of space heaters.

AMERICAN GAS ASSOCIATION APPROVED — COMPLIES WITH NATIONAL SAFETY REQUIREMENTS

Dollar-wise . . it's

Dearborn®

1700 W. COMMERCE • DALLAS, TEXAS

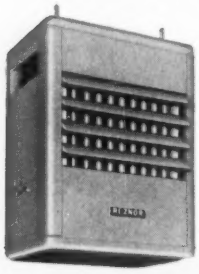
"Reznor is the one name in gas unit heating my customers all know and accept"

"I used to be surprised when so many of my unit heater prospects knew the name Reznor. When they accepted unquestioningly Reznor heaters as a quality product. Then I realized why.

"Reznor is the heater they see every day—in the drug store where they stop for cigarettes, the filling station where they buy gas, the barber shop where they get their hair cut. After all, Reznor makes nearly one out of two gas unit heaters sold. My prospects have as many chances to see Reznor heaters in operation as they do all other makes combined. And the fact that other businessmen they know are happy with Reznor heaters makes my selling job a lot easier.

"There's another thing, too. A lot of my prospects mention to me that they've seen Reznor advertising in the magazines they read. "The Saturday Evening Post." "Newsweek." "Nation's Business." "Industry and Power." "Mill and Factory." "Mechanical Engineering." No other unit heater manufacturer backs its dealers with such a powerful advertising program.

"I think that Reznor is the finest gas unit heater I could possibly offer my prospects. I'm glad that, because of its widespread acceptance, fine reputation, and powerful advertising, it's also the gas unit heater my customers are most willing to accept."



It's the same story everywhere you go. Reznor gas unit heaters are easier to sell because Reznor gas heater units are better known. Why don't you get on the bandwagon? Call your nearby Reznor distributor for complete details. You'll find him listed under "Heaters-Unit" in the yellow pages of your telephone directory.

REZNOR
THE WORLD'S LARGEST-SELLING GAS UNIT HEATERS
REZNOR MANUFACTURING COMPANY
4 Union Street, Mercer, Pa.

ern California and the northwest portion of Nebraska.

Prior to joining the Weatherhead Co., Mr. Bate was employed as a sales engineer by the H. R. Basford Co., and the Cratex Manufacturing Co., both of San Francisco. With the latter he served as sales manager.

H. J. Goss appointed sales manager for Harper-Wyman

H. J. Goss

Appointment of Howard J. Goss as sales manager of Harper-Wyman Co., Chicago manufacturer of gas appliance valves, burners and controls, is announced by Philip S. Harper Jr., executive vice president.

Mr. Goss joined the company in 1938 as a design engineer and became a sales engineer in 1940. He has been assistant sales manager since 1950.

Harper-Wyman has general offices and two plants in Chicago and a third plant in Princeton, Ill.

Rego division appoints A. T. Rider sales engineer

Alfred T. Rider has been appointed sales engineer for the Rego division of The Bastian-Blessing Co., Chicago, and will operate out of Memphis, Tenn. Mr. Rider will work under the direction of Harry Kaye, district sales manager in Kansas City.

Mr. Rider has had extensive experience in the L. P. gas field, including eight years in sales with another equipment manufacturer. Prior to that, he was with the Department of Commerce in Washington. He will cover western Tennessee and southern Missouri from his home in Memphis.

Three appointments made by John Wood Co.

John Wood Co. Ltd. has announced the appointment of V. A. Kirby to the position of vice president and manager, western plants, T. H. Gibson as vice president and manager of the Winnipeg plant, succeeding Mr. Kirby, and Charles E. Hanley to district representative in the Pittsburgh area.

Mr. Kirby has managed the com-

Installation time, based on actual tests, can be as short as 5 minutes.

Simplifies stocking, cuts down on service, saves time, saves effort, saves money.

Look how fast you solve room and wall heater control problems with

Honeywell Adatrol!*

the gas cock Pilotstat with add-on thermostat

NOW YOU can make an on-the-job addition of a thermostat any time your customers want it—without worrying about costly adaptations or re-workings. For when you use the Honeywell Pilotstat, and the Honeywell Adatrol thermostat—you need stock only two control items to fit all your gas room heaters and wall furnaces.

Think of what this compact Pilotstat-thermostat combination means in terms of savings! No longer do you need to stock complicated adapter kits and parts that get lost, depreciate, and become broken lots. No longer do your servicemen need to spend costly hours tinkering with makeshift connections.

All you stock is the C592 Pilotstat and T5000 Adatrol thermostat, which you can buy separately and put together in the field—or the V5153 *Adatrol* combination Pilotstat-thermostat, which comes already assembled from the factory.

So, start making your room heater and wall furnace business pay bigger profits! To order your Adatrol, or to get further information, call your local Honeywell office or write to Honeywell, Dept. BN-7-95, Minneapolis 8, Minnesota.

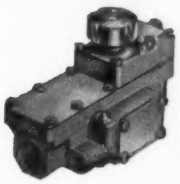
MINNEAPOLIS **Honeywell**

112 offices across the nation

First in Controls

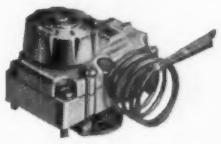
*Trademark

The Honeywell Pilotstat



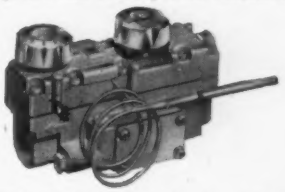
C592 Pilotstat. This new Honeywell Pilotstat fits any gas room heater or wall furnace. It features a 100% safety shutoff in case of pilot or flame failure. It is available with or without pilot gas filter, (no external filters necessary)—and will operate on all gases. Specifying it on all your heaters insures your customer simple economical addition of a thermostat when desired.

Plus this add-on thermostat



T5000 Adatrol thermostat. The new Honeywell Adatrol thermostat is a high-quality, self-contained, snap-action thermostat available with or without a high-low bypass. You can add it to the Pilotstat in less than 5 minutes. Just remove 6 screws and a plate from the Pilotstat—then fit the Adatrol thermostat in and replace 6 screws. It's as simple as that!

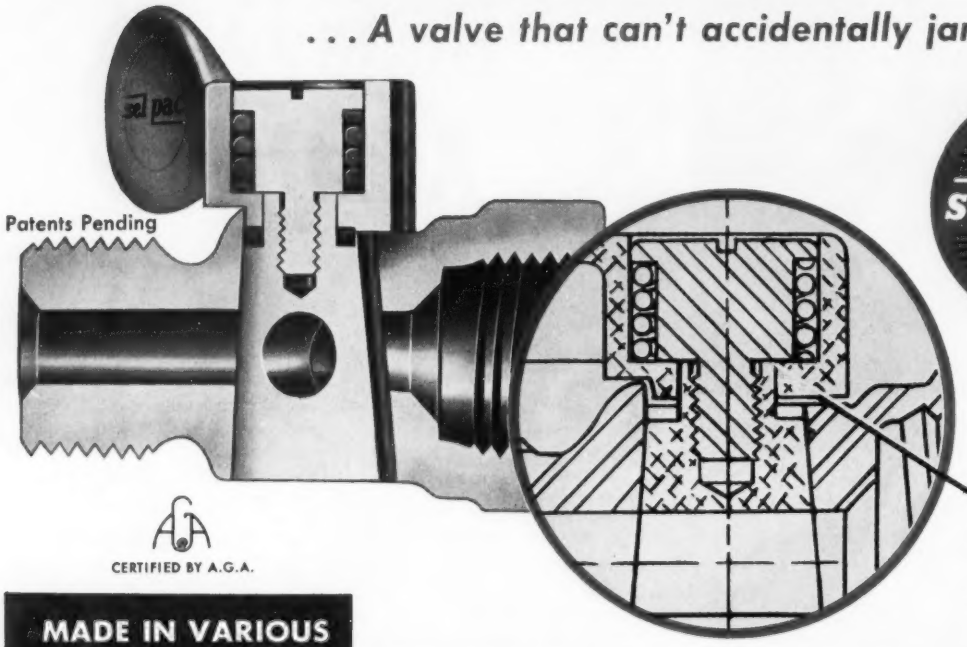
Equals the Honeywell Adatrol!



V5153 Adatrol—combination Pilotstat-thermostat. A compact, high-precision, Pilotstat-thermostat unit that fits all gas room heaters and wall furnaces. Can be serviced in the field, without removing piping. Cut installation, stocking, handling costs by standardizing of this efficient unit. Specify the V5153 for all your *thermostat*-equipped heaters.

MOST IMPORTANT DEVELOPMENT IN LP-GAS SHUT OFF VALVES IN YEARS

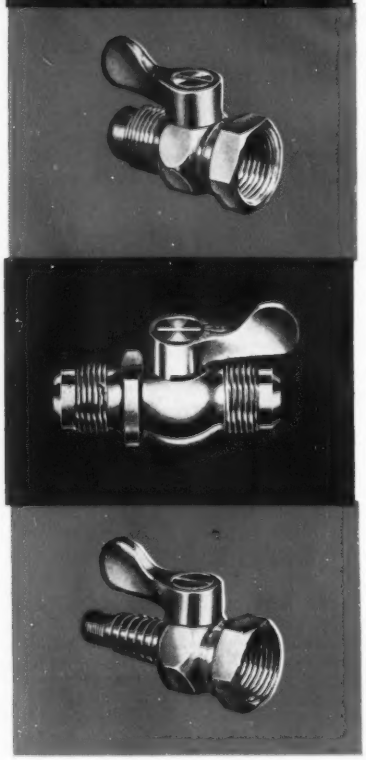
. . . A valve that can't accidentally jar off its seat



sel-pac

CERTIFIED BY A.G.A.

MADE IN VARIOUS STYLES and SIZES
CONSULT YOUR LOCAL SEL-PAC DEALER.

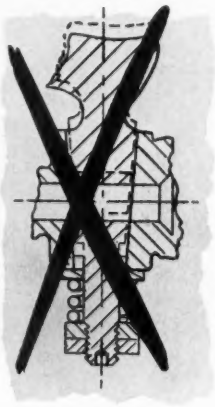


Here's a new low pressure gas shut-off valve so designed that external forces which would dislodge the tapered plug of ordinary valves, causing leakage, are no longer a problem.

The tapered plug inserted from the bottom is held securely in position at the top and locked to prevent axial movement and leakage. A combination cap and spring device, not only keeps the plug tightly seated on the taper but affords a protective housing around the spring as a safe guard against accidental dislodgment of plug.

The spring take-up, contained within the head, maintains a consistent tightness on the valve taper providing an automatic take-up for wear.

This new Sel-Pac valve, relatively small in size because of its steel construction, is several times stronger than conventional brass valves and will readily adapt itself to installation within limited space. The plug itself is bronze to provide dissimilar metal bearing surfaces. This Sel-Pac product carries AGA certification and is approved by leading building and heating codes. Each valve is individually tested and carefully packaged.



OLD WAY

PLUG MAY BE DISLODGED BY A FORCE ON THE BOTTOM AS INDICATED BY DOTTED LINES.

SELWYN-PACIFIC COMPANY

340 WEST AVENUE 26, LOS ANGELES 31, CALIFORNIA

ADVERTISEMENT

DON'T LEARN SAFETY ACCIDENTALLY

by
GEORGE R. POSTLEWAIT
President
SELWYN-PACIFIC COMPANY

The words, "Common Sense" and "Safety" may have little relationship in the design and manufacture of ladies hats, but they certainly are synonymous as related to our LP-Gas Industry. Safety can come only from (1) a full knowledge and understanding of the product with which we are dealing and (2) the use of common sense in the application of these facts.

I recently witnessed an LP installation, where one or the other of the two above points was lacking. It consisted of a beautifully installed 250,000 B.T.U. boiler setup — using 2 stage regulation, sample tanks to provide storage and vaporization of the cold winter temperatures encountered. The second stage regulator was installed within the building. All of the above indicates knowledge of the product and good installation practice. The "Boner" appeared when I discovered the installation man had run a vent line from the regulator relief vent into the flue of the furnace, instead of piping it outside the building to a safe discharge location.

Knowing that LP-Gas is heavier than air, he overlooked the serious results that might have occurred had the regulator relief discharged a lot of raw fuel in the flue some 6 feet above the open flame of the pilot light. He was very appreciative of having this little fact called to his attention and made an immediate change.

A second "Boner" I heard of, in another part of the country, didn't work out so easily. After an explosion and fire, it was proven in court that a branch line on an LP installation had been left with a globe valve at the end of the unconnected line. The globe valve was suitable for the line, but the installation man had not bothered to put a pipe plug in the downstream side of the valve. Children playing in the basement opened the valve. Had the valve been plugged, the accident would have been avoided.

For an excellent treatise on Safety we suggest you obtain Pamphlets 52 and 58 from the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts.

Don't learn Safety, accidentally.

SELWYN-PACIFIC COMPANY
340 West Avenue 26
Los Angeles 31, California

pany's Winnipeg plant for over 25 years and will have administration over the entire western operations of the company. He will continue his headquarters in Winnipeg. Mr. Gibson was a vice president and assistant manager for six years.

Prior to joining John Wood, Mr. Hanley served for three years as dealer promotion manager with Columbia Gas System, Pittsburgh Group Companies, where he headed up a group contacting manufacturers, wholesale distributors and plumber dealers handling domestic gas appliances.

McElroy appointed manager of Vulcan's new division

L. D. McElroy

Charles A. McNamar, president Vulcan Steel Tank Corp., has appointed Lee D. McElroy manager of Vulcan's newly formed LPG and AA division. A complete line of L.P. gas and AA vessels will be fabricated and marketed.

Mr. McElroy is a graduate of the University of Tulsa, where he majored in marketing and management. He is well acquainted with problems of the LPG and AA industries and with dealers in the midwest area, where he represented another fabricator for the past five years.

Vulcan Steel Tank Corp. has been producing products for the petroleum and chemical industries since 1927.

Soule named commercial heating and cooling manager

J. P. Soule

The appointment of John P. Soule as manager of commercial heating and cooling systems has been announced by D. J. Quinn, vice president of sales for the plumbing and heating division, American Radiator & Standard Sanitary Corp.

He will have offices at the division headquarters in New York City.

Mr. Soule joined the division in 1951 as a member of the staff of the

SEE *Griffiths* FIRST FOR

APPLIANCE SERVICING MATERIAL

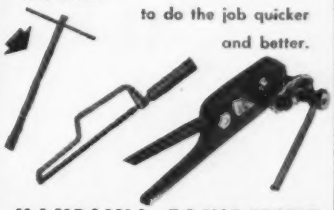
Save time, trouble, and cost, with one reliable, experienced supplier.

CONVERSION PARTS

Complete range of sizes on all types of orifices and other conversion needs.

TOOLS

Everything you need to do the job quicker and better.



HANDLING EQUIPMENT

Simplify your delivery service with M/W Cylinder Trucks and YEATS Appliance Dollies.

TESTING THERMOMETERS

Provide an accurate on-the-job check for all servicing requirements.

SEND FOR THIS COMPLETE CATALOG

THE E. F. *Griffiths* COMPANY
346 EAST WALNUT LANE
PHILADELPHIA 44, PA.

vice president of sales. He served as sales engineer in charge of development of the American-Standard "Remotaire" room conditioner, and later as heating and cooling specialist for the New York sales district.

Cities Service Oil Co. makes four new appointments

Guy W. Duren of Seminole, Texas, superintendant of the Cities Service-operated West Seminole gasoline plant, is being transferred to Bartlesville to serve as senior process engineer in Cities Service Oil Co.'s natural gasoline division. Edgar B. Lord, maintenance superintendent at the West Seminole plant, is being advanced to plant superintendent.

Vernon R. Dood recently joined the West Seminole plant staff and will serve as maintenance superintendent.

The appointment of Wm. H. Sloan as superintendent of natural gas liquids in Cities Service Oil Co.'s supply and distribution division is also announced. He has been serving as assistant to the manager of the company's pipeline transporation division.

$$ EXTRA DOLLARS
MOTOR FUEL
PATENTED
SATELLITE
• Capture Those Highway $ $ $ $ $
• Eye Appeal - Compact - Designed to Solve Space Problem
• A.S.M.E. Code Constructed — Quality Workmanship
• Delivered Complete
Write Today for Additional Information on "IMCO" Products.
IMCO
INDUSTRIAL MFG .CO. of TEXAS INC.
SWEETWATER, TEXAS • BOX 698 • PHONE 4862

Warren Petroleum Corp. announces several appointments

Several promotions and additions to the executive staff of Warren Petroleum Corp. have been approved by the board of directors and became effective June 1, W. K. Warren, chairman, and James E. Allison, president, announced recently.

D. L. Connelly of Houston has been elected senior vice president of the oil production division.

S. I. Hulse has been named senior vice president of the natural gasoline sales division.

F. S. Schwend **G. L. Brennan**
Warren Promotions

G. L. Brennan has been advanced to senior vice president of the liquefied petroleum gas division.

C. E. Wharton has been named vice president, manufacturing.

Rex V. Phelps has been advanced to vice president, terminal and transportation.

Fred S. Schwend has been elected vice president, liquefied petroleum gas.

W. B. Padon has been named vice president, projects and planning.

H. F. Beardmore of Houston has been elected vice president, oil production.

Mr. Hulse came to Tulsa in 1923 and joined the Sinclair Oil & Gas Co. In 1927, was made chief engineer at Sinclair's large natural gasoline plant in the Seminole oil field. Three years later he returned to Tulsa as assistant sales manager of the gasoline department, the position he resigned to join Warren on June 1, 1936, as assistant sales manager. He was elected a director in 1939, and a vice president of the corporation in 1942.

Mr. Brennan joined the Warren organization Dec. 1, 1941, after more than 20 years of experience in the liquefied petroleum gas phase of the petroleum industry. He was named manager of Warren's L. P. gas division, the position he held until he was elected vice president Jan. 1, 1954, and a director on January 30, 1956.

Born and educated in North Dakota, Mr. Brennan obtained a degree in mining engineering from the Uni-

"The day I got **MAD** *enough to do something about my sales!"*

"Customers complaining about service—and dropping off because of it . . . drivers chasing all over the county, phoning in from every stop . . . trucks piling up dead mileage that was just money down the drain . . . finally I'd had enough—I decided to get off the fence and at least *try* 2-way radio.

"It's been just a year since my Motorola equipment was installed—sales and profits started climbing *from that day*. My dispatcher now keeps contact with every driver all day long. He can plan the work so waste mileage and time are held way down—and every truck makes *more* deliveries every day.

"Emergency calls get answered in just a few minutes. In fact our customer service is now the fastest and best in our area. Now that we've used it, we just couldn't do the job without our Motorola 2-way radio. Before I decided, I asked around, and everyone I talked to considers Motorola the best in the business. I guess they should be—they've had the most experience. So I picked Motorola 2-way radio and it doesn't cost—it Pays!"

FOR ACTION!

(TO L.P.G. OPERATORS)

MOTOROLA

2-WAY RADIO

MOTOROLA COMMUNICATIONS & ELECTRONICS, INC.
A SUBSIDIARY OF MOTOROLA, INC.
4501 AUGUSTA BOULEVARD • CHICAGO 51, ILLINOIS

MOTOROLA Communications & Electronics, Inc.
4501 Augusta Blvd., Chicago 51, Ill.

☐ Send me additional information
☐ Have a Radio Engineer call on me

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____

The only complete radio communication service—by the outstanding leaders of the industry.

versity of North Dakota. For nine years after graduation, he was employed by Harbison-Walker Refractories Co. before first entering the L. P. gas business in early 1929, when he joined the Philgas division of Phillips Petroleum Co.

Mr. Phelps joined the Warren organization in 1940, and was assigned to the engineering phases in connection with the construction of three natural gasoline plants constructed between 1940 and 1943.

Transferred to the L. P. gas division as an engineer in 1943, he supervised the engineering and construction of bulk plants, marine transportation, terminals, and inland and underground storage facilities.

Early in 1955, the corporation created the terminal and transportation division and Mr. Phelps was named manager, with the natural gasoline storage, traffic, L. P. gas storage, marine, and engineering and construction departments under his jurisdiction.

Mr. Schwend is a chemical engineering graduate of the University of Texas, obtaining his degree in 1939. He joined the engineering staff of Phillips Petroleum Co., and in December of 1941, he was made process engineer for plants producing ingredients for synthetic rubber, his work includes the design and construction of several plants.

He was granted a leave of absence in June of 1945, to work for Reconstruction Finance Corp. in Washington. A year later, Mr. Schwend was named production manager of the petroleum butadiene section of Rubber Reserve.

Late in 1946, Mr. Schwend joined the Warren organization's L. P. gas division, being named manager of the division in January, 1954, and assistant vice president in June of the same year.

WORLD'S SAFEST GAS HEATING UNIT

HUNT Nōvent FOR WALL OR WINDOW . . . AGA APPROVED

HEATS FLOORS FIRST—then hot air circulates through room to prevent overhead stratification.
EASY TO INSTALL AND SERVICE—quickly and inexpensively installed in any standard double hung window or in any outside wall. Compact.
VENTED—YET NEEDS NO VENT—exclusive design eliminates need for costly, unsightly outside vents or chimneys. All burned gases and odors forced outside without pipes or flues.
BURNS NO ROOM AIR—all combustion air drawn in from outside, eliminating danger of oxygen starvation.
SAVES GAS AND SPACE—cabinet extends only 8½" into room, saving valuable floor space. Burner is thrifty and efficient in operation—high in performance.
MULTIPURPOSE UNIT FOR ALL CLIMATES
QUICK, CLEAN AUTOMATIC HEAT—instant, draft-free warmth, automatically maintains comfort level desired. Walls, furniture remain free from costly damage by soot, dirt, and moisture condensation.
QUIET, POWERFUL BLOWER—three squirrel-cage blowers, single motor-operated, provide 460 cubic feet of air per minute.
GAS-TIGHT CONSTRUCTION—heating units seam-welded throughout; carefully tested to assure gas-tight, leak-proof operation.
WEATHER-TESTED—thoroughly field-tested for trouble-free operation in all weather. Burner input rating: 35,000 btu on all gases. Operates on 110-volt 60-cycle alternating current. Heat exchanger carries five-year warranty against rusting or burning out. Controls, other component parts guaranteed for one year.

DEVELOPED AND MANUFACTURED BY
HUNT HEATER CORPORATION
220-BP 12th Ave., N.
NASHVILLE 4, TENNESSEE

Turner promoted to sales manager for Robertshaw-Fulton

J. R. Turner

James R. Turner has been appointed district sales manager of the cooking appliance controls division of Robertshaw - Fulton Controls Co., it is announced by Charles M. Stainton, vice president and director of sales for the organization.

Mr. Turner will be in charge of sales of thermostats and other controls for cooking appliances in a territory that includes Washington, Oregon, Nevada, Montana, Idaho, Wyoming, and northern California. His office is located in Tilden Sales Bldg., 420 Market St., San Francisco.

Prior to joining the Robertshaw organization in 1954, Mr. Turner served with Coast Counties Gas Co. for 24 years. When he left the utility, he was service manager.

Victor transferred to United Petroleum's Minneapolis office

Frank T. Carpenter, president of United Petroleum Gas Co., announces the transfer of Fred S. Victor, formerly of Tulsa, to United's home office in Minneapolis. Mr. Victor will continue his duties as manager of product supply and in addition will assist F. H. Andrews, vice president, in other projects.

Greg L. Stephens, of United's Houston, Texas, office will replace Mr. Victor in Tulsa and assist him in purchasing and product supply. United closed its Houston office June 1, but will continue to serve the Southeast area from its Tulsa office. No changes are contemplated at this

For long, dependable service..

Charlotte D-Hydrated BUTANE & PROPANE Systems

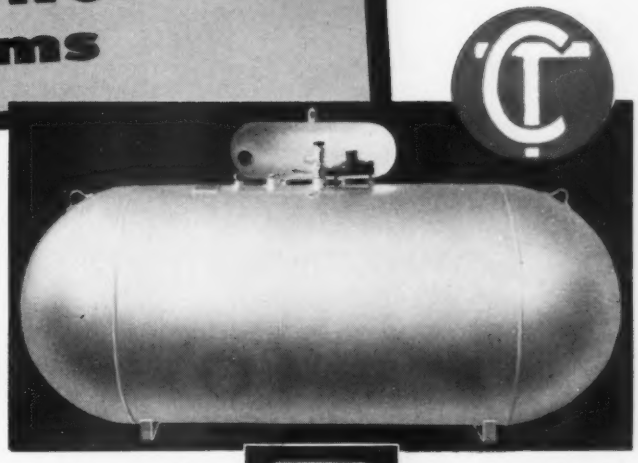
Charlotte D-Hydrated Butane and Propane Systems mean more money for you because they last longer and require less maintenance!

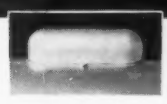
All systems are Underwriters' approved and are built to the exacting specifications of the ASME Codes. Charlotte systems have close-fitting, easily operated hinged metal hoods for quick servicing and positive protection of accessories.

Above ground tanks are equipped with steel feet. Concrete saddles are available if desired.

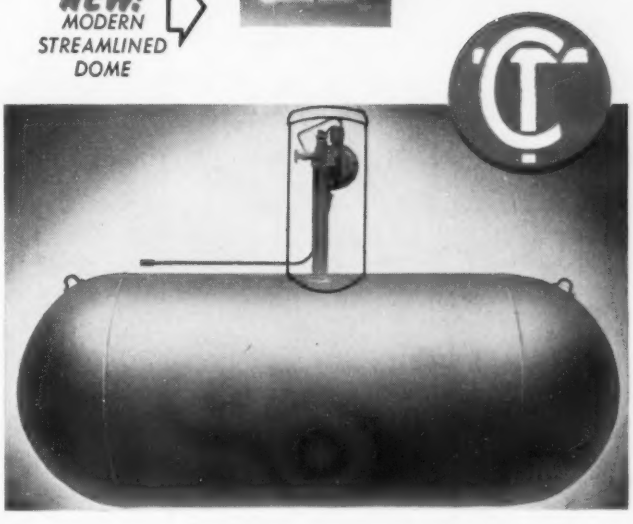
Charlotte D-Hydrated Systems come complete with all necessary valves and fittings and regulator. Available in a wide range of capacities.

Buy highest quality Charlotte systems for long, dependable service with minimum maintenance!





NEW! MODERN STREAMLINED DOME



GUARANTEED
to be dry systems. Charlotte D-Hydrated Propane and Butane Systems provide maximum safety and easy servicing.

CERTIFIED
to be constructed according to ASME specifications. Charlotte D-Hydrated Systems are fully approved by Underwriters' Laboratories.

Write for full details and prices on Charlotte D-Hydrated LP Gas Systems, Engineered Truck Tanks, ASME Cylinders, Anhydrous Ammonia Tanks.

CHARLOTTE TANK CORPORATION
Phone EDison 2-2188 • P. O. Box 8037
CHARLOTTE 8, NORTH CAROLINA

time with respect to the Midland, Texas office and C. H. Koch will remain in charge there.

Anchor Petroleum promotes Adrian to traffic manager

Adrian L. Harper, former assistant traffic manager for Anchor Petroleum Co., Tulsa, has been promoted to traffic manager. The announcement is made by Fred A. Shellhorn, Anchor vice president in charge of transportation.

Prior to 1951, Mr. Harper was employed for 25 years with Midland Valley Railroad in the traffic and accounting departments.

Gulf Oil Corp. elects William K. Warren to board of directors

William K. Warren, chairman of the board and chief executive officer of Warren Petroleum Corp., has been elected a director of Gulf Oil Corp. which acquired Warren Petroleum this year.

Announcement of the election was made from Tulsa, Okla., Warren Petroleum headquarters, where the Gulf Oil board met last month.

The new post completes a 40-year cycle for Mr. Warren. In 1916 he worked for Gypsy Oil Co., then a subsidiary of Gulf. He left to found and develop Warren Petroleum Corp., which merged with Gulf this year.

Are You Ready For Next Winter's Storage?

Now is the time to install your new Bulk Plant or remodel your existing one.

An efficiently designed bulk plant will save money by reducing loading and unloading time.

Roney's pre-fabricated bulk plants, designed for your specific requirements, are ready for installation on delivery. Roney Bulk Plants are in use in many foreign countries as well as in the United States.

Write today for more detailed information.

RONEY INC. 105 COLE STREET DALLAS 7, TEXAS

BULK PLANT DESIGNERS AND ENGINEERS

Gray promoted to manager of manufacturing for Bryant

G. N. Gray

The appointment of Gordon N. Gray to the newly - created position of manager of manufacturing for all of Bryant's plants has been announced by Ronald N. Campbell, Bryant general manager.

Mr. Gray, who has been plant manager of Bryant's headquarters plant at Indianapolis since 1953, takes over manufacturing supervision of the company's plants at Tyler, Texas, and New Lexington, Ohio, as additional responsibilities of his new position.

As manager of manufacturing, Mr. Gray will supervise manufacturing of residential furnaces and air dryer equipment at Indianapolis; air conditioning equipment, water heaters and unit heaters at Tyler, and specialized controls for the heating and appliance industry at New Lexington.

Tappan Stove promotes Wolf to manager of contract sales

Martin V. Wolf, former territory manager for Indiana, has assumed the newly created position of manager of contract sales for the built-in equipment division of the Tappan Stove Co., Mansfield, Ohio.

Wolf appointed regional sales manager for Stewart-Warner

Gus Wolf has been appointed regional sales manager of Winkler air conditioning and heating equipment it is announced by Herman E. Winkler, general sales manager of the U.S. Machine division of Stewart-Warner Corp.

Mr. Wolf joined Stewart-Warner in 1948 as a field service engineer of the South Wind division, Indianapolis. He moved to the Lebanon plant as regional sales manager of "Saf-

These Sinclair Extras Mean Good News for You!

When you feature Sinclair LP-Gas you'll be sure of more new customers, more satisfied repeat customers. Headlining Sinclair LP's benefits are the five famous Sinclair extras – INTEGRITY, REPUTATION, QUALITY, PERFORMANCE and GOOD SERVICE – all working to increase your sales and profits while they build and enhance your business reputation.

Ask for details on Sinclair's top quality LP-Gas with high heating value – moisture and impurities removed.

MEMBER LPGB

MEMBER national LP-GAS PROMOTIONAL program

Sinclair Oil and Gas Company
Liquefied Petroleum Gas Sales Department
Sinclair Oil Building, Tulsa, Oklahoma

SINCLAIR
A Great Name in Oil

Aire" space heating equipment, another product of U. S. Machine, when that operation was purchased and made a division of Stewart-Warner Corp. in 1953.

He will continue to make his headquarters in the factory in Lebanon.

Chyle elected president of American Welding Society

J. J. Chyle, director of welding research, A. O. Smith Corp., Milwaukee, has been elected president of the American Welding Society, it was announced at the Society's annual meeting in Buffalo, N. Y.

As head of AWS Mr. Chyle will direct its many activities devoted to advancing the science and art of welding.

Mr. Chyle graduated in Chemical Engineering from University of Wisconsin, 1924. After working for a short period at Smith Steel Foundry, Milwaukee, he joined the A. O. Smith Corp. as a chemist in the production laboratory. In 1926, he was named head of welding electronic research and, in 1937, he was appointed director of welding research.

Mr. Chyle has invented and patented a number of welding electrodes and welding processes. The first extruded, all-position type of electrode was developed by him in 1927. Special alloy electrodes for the welding of high-strength alloy steels were also developed by him and used extensively during World War II on aircraft landing gears, torpedo airflasks and bombs.

Welding processes orignated under his direction, include those for the welding of low-alloy high-tensile steels.

During the war, he was a member of the Sub-Committee on Welding of Armor. He also participated in the work essential to the production of the atomic bomb.

International Harvester elects McCaffrey to its board

John L. McCaffrey has been elected chairman of the board of directors and chief executive officer of International Harvester Co.

At the same time, Peter V. Moulder, formerly executive vice president, was elected president of the company to succeed Mr. McCaffrey.

Frank W. Jenks, formerly vice president in charge of merchandising services, was elected executive president.

Harry O. Bercher, formerly vice president in charge of the steel division and purchasing and traffic, was elected executive vice president.

Christian E. Jarchow, executive vice president since 1952, will continue to serve in that capacity.

Mr. McCaffrey has been president of the Harvester Co. since 1946. His career with the company began in 1909.

Pierson and Proulx appointed to Rheem plumbing, heating div.

Robert J. Pierson Jr. is the new national advertising and sales promotion manager of the plumbing and heating and container divisions of Rheem Manufacturing Co. He replaces B. Edward Soby, who has resigned to start his own business in the San Francisco area in September.

D. W. Proulx has been named the new national product manager for water heaters of the same division of

GEM Quality

The spectacular beauty of a fine diamond doesn't begin to suggest its extremely hard and durable texture . . . its fine quality goes far beyond appearance.

VISIBLE Float Gauges are like that . . . tough and dependable on AA or LPG domestic or bulk storage systems . . . even on the heaviest, rough-riding mobile equipment! That's why VISIBLE is the standard of the industry . . . IT'S A JEWEL!

SPECIFY: VISIBLE MAGNETIC

Sizes for all AA & LPG storage systems . . . mobile or stationary.

WRITE TODAY FOR FULL DETAILS AND PRICES.

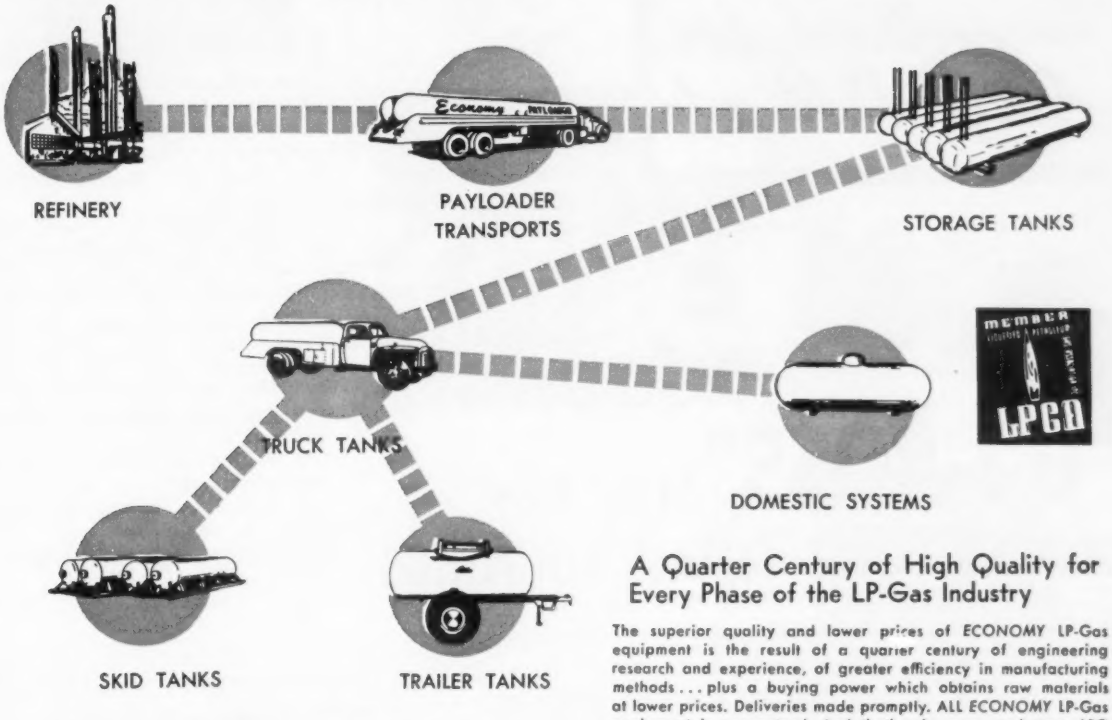
SQUIBB TAYLOR INCORPORATED

1213 S. AKARD, DALLAS
2545 SUMMER, MEMPHIS
MEEDER EQUIPMENT CO.
1745 N. EASTERN, LOS ANGELES
ODELL GLASS & CO.
1277 HARDEE ST. N. E., ATLANTA

Okay . . . I WILL say it again . . .

TANKS BY BANKS

Economy L-P GAS EQUIPMENT Means GREATER PAYLOAD PROFITS!



MEMBER LPGA

— SPECIAL STEEL FABRICATION OF ALL TYPES —

A Quarter Century of High Quality for Every Phase of the LP-Gas Industry

The superior quality and lower prices of ECONOMY LP-Gas equipment is the result of a quarter century of engineering research and experience, of greater efficiency in manufacturing methods . . . plus a buying power which obtains raw materials at lower prices. Deliveries made promptly. ALL ECONOMY LP-Gas equipment is guaranteed. And that's why more and more LPG dealers, coast-to-coast, are saying: "ECONOMY LP-GAS EQUIPMENT Means GREATER Payload PROFITS!"

Let Our Engineering Department Help With Your LPG Problems

Financing Available For Approved Dealers

DALLAS TANK COMPANY, INC.

Quality tanks for a quarter century

201-5 West Commerce Street, Dallas, Texas
Phone Riverside 5001

409 Lee Street, Vicksburg, Mississippi
Phone 2971

the company. He replaces Mr. Pierson Jr.

Prior to this new position, Mr. Proulx was assistant sales manager for plumbing and heating of the Chicago region of Rheem. He joined the Rheem sales organization in 1938.

Lareau becomes president of Air Way Electric Corp.

The board of directors of Air Way Electric Corp., Toledo, Ohio, announce the appointment of R. A. Lareau as president of the firm.

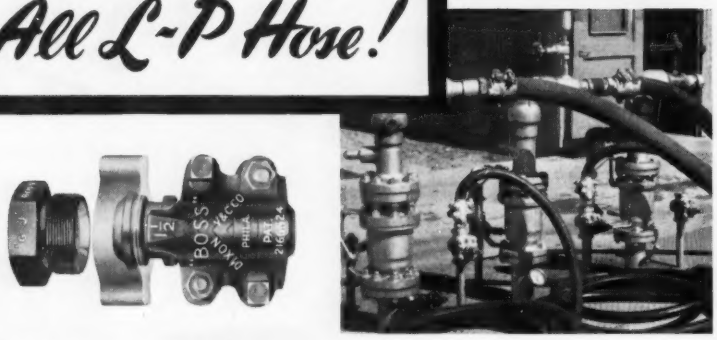
For the past two years Mr. Lareau has been president of White Products Corp., Middleville, Mich., manufacturers of White automatic water heaters. White is a subsidiary of Air Way.

Florence Stove promotes Jeske to vice president

Harold H. Jeske has been appointed vice president in charge of operations of the Florence Stove Co., according to J. P. Wright, president of the company.

Mr. Jeske became associated with Florence in 1954, as a vice president. He was appointed a member of the board of directors in 1955.

Strongest, Safest Connections...for All L-P Hose!



"G J-BOSS" STYLE X-34
GROUND JOINT FEMALE COUPLINGS

Unequalled in strength, durability and safety! That's why more and more "GJ-Boss" Couplings are being used on hose handling L-P Gas . . . at bulk plants . . . on carloading rigs . . . and other installations. All parts are steel or malleable iron, thoroughly rustproofed. Furnished with super-strong "Boss" Offset and Interlocking Clamps. Ground-joint union between stem and spud forms leakproof, trouble-free seal. Sizes ¼" to 6", inclusive. Also available in washer type, and with companion "Boss" Male Couplings. *Stocked by Manufacturers and Distributors of Industrial Rubber Products.*

DIXON Valve & Coupling Co.
GENERAL OFFICES & FACTORY—PHILADELPHIA 22, PA. BRANCHES—CHICAGO
BIRMINGHAM • LOS ANGELES • HOUSTON • DIXON VALVE & COUPLING CO., LTD., TORONTO
ASSOCIATE COMPANIES—BUCK IRON COMPANY, INC., QUARRYVILLE, PA. • PRECISION DRAWN STEEL COMPANY, CAMDEN, N.J.

Gene Bumpus

Gene Bumpus

Gene Bumpus, eighth president of the Texas Butane Dealers Association, died at Plainview, April 7. He was 41 years of age.

In Amarillo, Mr. Bumpus operated a filling station for a few years until, with H. G. Johnson, he entered the liquefied petroleum gas business as Johnson-Bumpus Inc., operating at Plainview, Amarillo and Edmonson. In 1954 he purchased the Johnson interest in the organization and the firm name was changed to Gene Bumpus Inc.

During his lifetime he served as a director of the Dealers National Insurance Co., and was vice president of the Quality Steel Co. of Lubbock.

During his term as president of the Texas Butane Dealers Association, Mr. Bumpus launched many activities which continue for the benefit and improvement of the industry. The year he gave to the Association was one of great progress for the organization, largely due to his efforts and leadership; he traveled extensively, visiting every section of the state and meeting with members in district and local gatherings.

He is survived by his wife, Ruby, a daughter, and a son.

George B. Sheppard

George Brown Sheppard, a pioneer in the bottled gas business, died May 22 at the Laurens County Hospital, Laurens, S. C. Death of the 61-year-old man was apparently due to a heart attack.

Mr. Sheppard was a graduate of Princeton University and a veteran of World War I. He was a past president of the South Carolina Liquefied Petroleum Gas Association; a past county chairman of the Republican party and was chosen as an alternate delegate to the Republican national convention this year.

Hot Weather

White, grey or other light colors will reduce summer temperatures inside the building. An Armco Building painted white is as cool as any building can be without mechanical cooling equipment.

You get low-cost comfort in any weather with an Armco Steel Building

Whatever the weather, *you are* comfortable (and machines and equipment are protected) in an Armco Steel Building. This is one more reason why you'll find Armco Buildings doing a lot of different jobs for the LP-Gas Industry—offices, salesrooms, bottle filling houses, garages and compressor houses for example. Look at these other benefits.

- **Wide size range—up to 60-foot clear-span widths**
- **Durable, noncombustible, all-steel construction**
- **Clean, attractive lines**
- **Little or no maintenance**
- **Easily expanded to meet future needs**
- **Erection service available**

Write us for complete information on these versatile buildings. Armco Drainage & Metal Products, Inc., 5436 Curtis Street, Middletown, Ohio • Subsidiary of Armco Steel Corporation.

ARMCO STEEL BUILDINGS

Cold Weather

Interlocking STEELOX Panel joints are weather-tight. Wind and water can't get in. And any standard insulation material can be used where desired.

BPN NEWS

Current reports on LPG to be published by API

Preliminary plans for the collection and compilation of more current statistics on the production and stocks of L. P. gas were announced by the American Petroleum Institute.

The collection of the information is being undertaken at the specific request of the Natural Gasoline Association of America, whose board of directors requested the Institute, through its department of statistics, to provide this service on their industry primarily as a means of more adequately serving the consumers of their product. It was felt that this desirable goal could better be accomplished with more frequent and more timely operating information on L. P. gas than is now available. The NGAA noted that it was the preference of their industry that the API handle the collection and compilation of these figures because the latter has been engaged in such activities otherwise over a very long period, and has won high acceptance for the accuracy and reliability of its statistical reports.

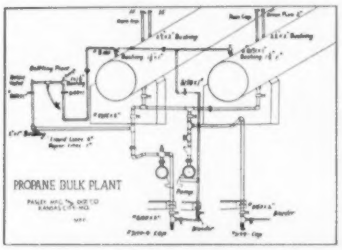
It is anticipated that these reports will be published semi-monthly, as soon after the fifteenth and the end of each month as is practicable, and in that connection it is hoped to establish the same relationship for these figures as now exists between the receipt and publication by the Institute of the figures included in its weekly refinery activity and inventory report.

The data to be released will indicate production and inventories of propane, butane, butane - propane mix, iso-butane and other mixtures, as well as the totals thereof, the American Petroleum Institute said. In order to arrive at the production of some of the products concerned, it will be necessary, however, to gather basic figures on shipments, relating these through inventories back to production.

Your One Supplier with everything in L.P. gas and Anhydrous Ammonia Equipment

PASLEY-BUILT Twin Barrel and Single Barrel Truck Tanks give you capacity loads at a minimum overhead. The custom-built, well-engineered Twin Barrel — and Pasley-designed singles — can be furnished in any capacity. All Pasley units are engineered to your requirements, with operating features that have been developed in the field. Send us your specifications — we will submit quotations.

MAXIMUM PAYLOAD is possible with a Pasley-designed single or twin barrel TRANSPORT. The unit is constructed so the load can be easily shifted for different type tractors. If you require a Transport, contact Pasley.



SQS **BULK PLANTS**

Pasley LPG and Ammonia type installations are completely installed — a turn-key job — or we furnish you the necessary materials and engineering service for your own installation. There are over 200 Pasley-built bulk plants in operation. Contact us.

and a complete line of accessory equipment

"EVERYTHING IN LPG AND ANHYDROUS AMMONIA"

The Pasley Mfg. & Dist. Co.

601 East 11th Street • Kansas City, Mo. • Tel. Victor 2369

Bigger receives Bottled Gas Corp.'s Service Award

Oldest employee in length of service at Bottled Gas Corp. of Virginia, George Y. Bigger, was presented with a 15-year Service Award pin by E. Otto N. Williams, president. Treasurer of the corporation, Charles W. Evans, was awarded a 10-year pin during the brief ceremony at the firm's Richmond headquarters.

Reflecting on the rapid growth of the company during its relatively short existence, Mr. Williams reminded Mr. Bigger of the days in 1941 when the payroll could be distributed in 10 minutes to less than a dozen employees. Today, Bottled Gas Corp. has offices in six cities in Virginia and a total of 124 employees.

Ruud designs commercial water heater institute

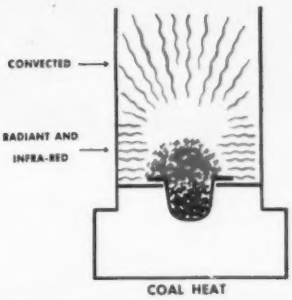
Ruud Manufacturing Co., Kalamazoo, Mich., has designed the Ruud Institute of Commercial Water Heater Engineering. The purpose of the institute is to train L. P. gas representatives in correct specifications and installation of commercial gas water heaters.

The first class, recently graduated, was composed largely of Ruud factory and field personnel with some representatives of the L. P. gas industry.

THE NEW BIG NAME IN LP-GAS HEATING

BURDETT "RADI-HEAT" CONVERSION BURNER

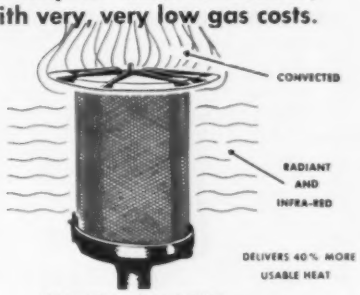
Sensational in its performance, silent and it may be hard to believe, "but owing to its scientific design" operates with very, very low gas costs.



MOST OF THE HEAT PRODUCED BY A COAL FIRED HEATING PLANT IS INFRA-RED AND RADIANT HEAT thrown off by a large mass of fixed carbon burning at the grate line.

THE REASON

Utilizes all of the heating surface with usable heat.



"RADI-HEAT" GAS BURNER

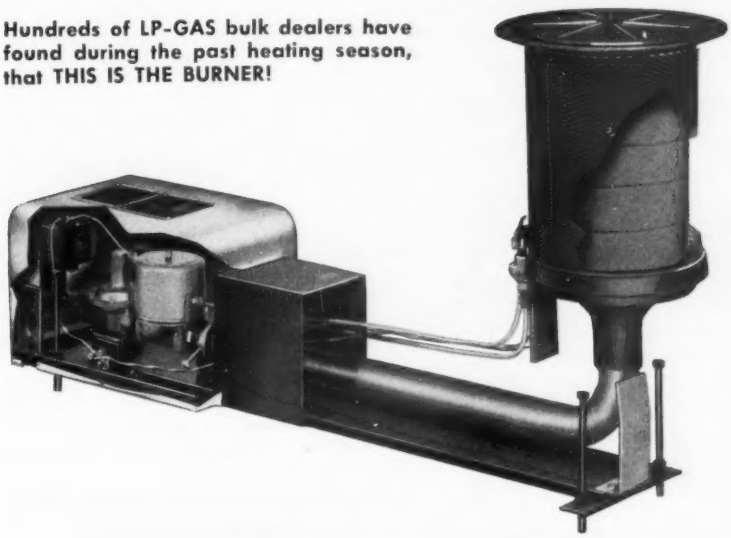
The "RADI-HEAT" gas conversion burner operates on the same heating principle used in the coal fired heating plant. A large mass of ceramic material in the center of the burner saturates the side walls of the heating plant with radiant heat. The expanding chrome steel surrounding the burner transfers large quantities of infra-red heat directly into the side walls of the heating plant, practically duplicating the condition existing in coal firing.

Increase your business—give your customers lower fuel cost—
gives you something exclusive to sell

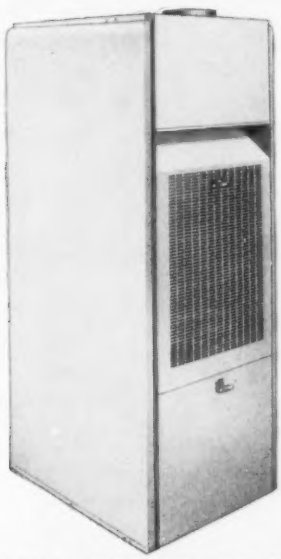
EXCLUSIVE DISTRIBUTOR FRANCHISES FOR LP-GAS BULK PLANT OPERATORS

Wire or write for full details

Hundreds of LP-GAS bulk dealers have found during the past heating season, that THIS IS THE BURNER!



BURDETT "RADI-HEAT" GAS CONVERSION BURNER
FROM 60,000 TO 180,000 B.T.U.
AVAILABLE WITH GENERAL SELF-ENERGIZING CONTROLS



FREEMAN SPECIAL LP-GAS FURNACES
FIRED WITH FREEMAN SILENT JET
GAS BURNER

THE MOST EFFECTIVE LIVE DEMONSTRATION EVER USED IN THE HEATING INDUSTRY

ILLINOIS IRON & BOLT COMPANY

ESTABLISHED
1864

CARPENTERSVILLE, ILLINOIS
TEL. HAZEL 6-3401

Diplomas were awarded those completing the concentrated four-day course which was divided between lectures, demonstrations and examinations of Ruud commercial gas water heaters. They supply hot water in the food service, apartment house, hotel, motel, school, institutional and other fields.

Instruction was under the direction of K. M. Clark, executive vice president, R. N. Spear, commercial sales manager, and H. B. Kivlan, service manager, all of the firm's Kalamazoo factory staff.

Similar sessions are being planned for the future and each class will continue three and one-half days. Those attending will be selected from the L. P. gas, plumbing retail and wholesale, and gas utility fields from 11 parts of the country.

R. N. Spear (center), commercial sales manager for Ruud, demonstrates the new factory-fabricated piping system for multiple Ruud installations to J. R. Lavelle (left), manager of the company's direct-factory branch in Philadelphia, and R. B. Lees, vice president of the H. R. Basford Co., San Francisco.

Bryant begins building program in Indianapolis

Bryant Division, Carrier Corp., has begun construction of an administration and engineering research building at its national headquarters in Indianapolis, Ronald N. Campbell, general manager, has announced.

Upon completion of the new building, Bryant will move its offices from their present downtown location at 48 Monument Circle to 2020 Montcalm St. on the near west side of Indianapolis.

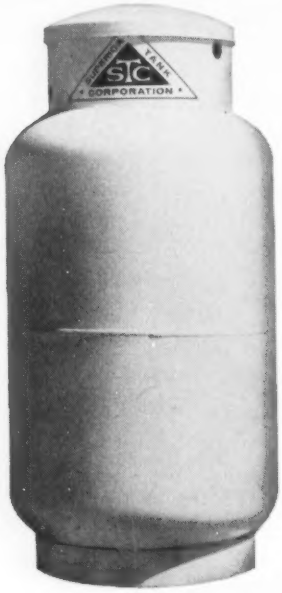
According to Mr. Campbell, the building will provide much-needed general office space, and will enable the company to conduct a comprehensive sales and engineering training program in both heating and air conditioning. It is scheduled for completion by Aug. 31.

William Wallace establishes Los Angeles warehouse

A new warehouse at 5160 Alhambra Ave., Los Angeles, has been announced by William Wallace Co., manufacturers of Metalbestos gas venting products. The building is expected to provide improved service and faster deliveries to its increasing number of Southern California customers.

The Southern California district

Sell Service with SUPERIOR LPG Systems



ONE TANK OR A TRUCKLOAD

Our modern, new plant is fully equipped to serve dealers from Kentucky to the Keys—from the Mississippi to the Atlantic! Every Superior tank . . . every fitting more than meets national and local specifications. Whether you need a domestic tank, tractor tank, or a complete industrial system, SUPERIOR engineering know-how means superior service! Thirty-five years of LPG experience combined with a thorough knowledge of your problems mean you can do a better, quicker, more profitable job. *Sell service with* Superior! Call or write today for details!

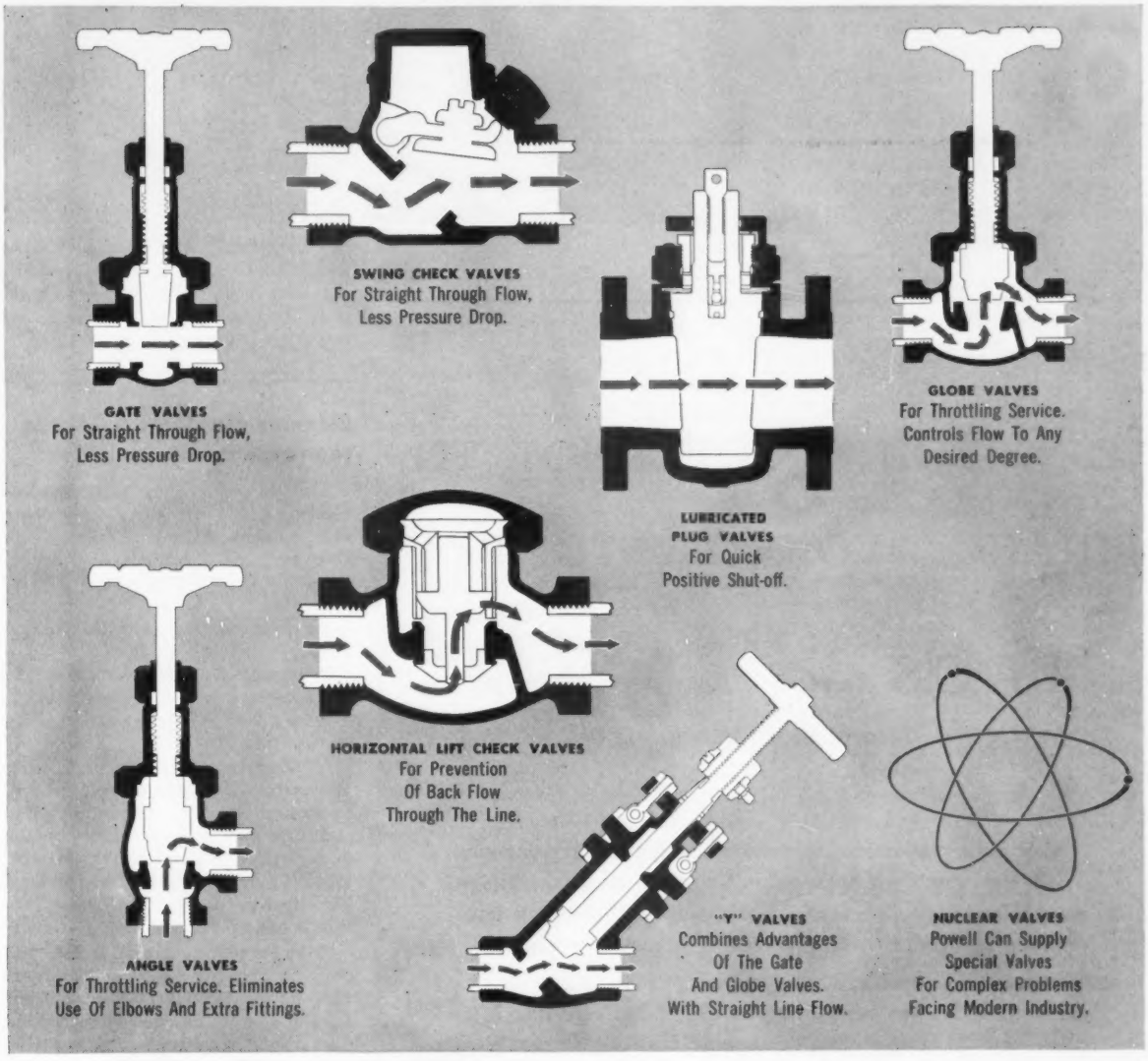
Pictured is Superior's 200-lb. ICC Upright Cylinder — engineered for safety, quality, service in domestic systems.

SUPERIOR
TANK CORPORATION

Tel. (Clarkston) 3-7151, 4846 Lawrenceville Hwy., Tucker, Ga.

SUPERIOR TANK STC CORPORATION

POWELL
for all valve needs



for every flow control problem there is a right Valve

Powell can supply this right valve—*made right* of the right material*. Every part of every valve must pass rigid inspection. And as a final step in manufacture, every Powell Valve has *Performance Verified* through an *actual line test.*

As an aid in selecting the right valve, the basic valve designs are illustrated here. For complete information on the wide range of sizes and materials available in each type of the basic valves illustrated above, consult your Powell Valve distributor. If none is located near you—or if you have a special flow control problem—write direct to The Wm. Powell Company, Cincinnati 22, Ohio.

PERFORMANCE
PV
VERIFIED

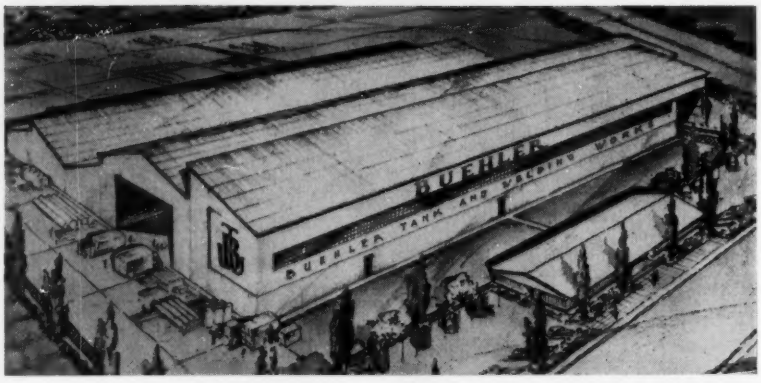
The Wm. Powell Company, Cincinnati 22, Ohio . . . 110th YEAR

POWELL VALVES

*BRONZE, IRON, STEEL AND CORROSION RESISTANT VALVES.

sales office, formerly located at 1217 W. Glen Oaks Blvd., Glendale, has also been moved to 5160 Alhambra Ave. Russell Smith has been added to the Los Angeles sales force at that office.

Robert A. McHugh, whose promotion from Los Angeles district manager to western district manager of the Metalbestos Division with collateral responsibility as sales manager for other sheet metal building products was recently announced, will move to the company's headquarters in Belmont, Calif., in the near future.



The new Buehler Tank & Welding Works at Orange, Calif. is being built on an eight-acre site with present construction covering 60,000 sq ft including an office building detached from the main fabricating plant.

LPG equipment manufacturers . . .

CAN YOU AFFORD NOT TO FINANCE YOUR CUSTOMERS?

F.A.C.'S *flexible finance plan helps you gain new customers, keep old ones.*

Today your customers are demanding long-term financing. When they don't get it, they don't buy. F.A.C.'s installment sales financing plan meets this demand with a sound, business-like solution to your customer's financing problems.

This service is flexible, so you can adapt it to any particular sales situation. We serve many of the nation's leading LPG equipment manufacturers—financing every product from small cylinders to huge bulk storage tanks.

F.A.C.'s Flexible Financing Plan gives you an extra sales tool—because it's another reason for prospects to buy from you. Why not meet their demand? Don't lose customers. Finance them. We urge you to telephone or wire—one of our officers will be glad to serve you.

FAC Plan FIRST ACCEPTANCE CORPORATION

Minneapolis 2, Minnesota 820 Northwestern Bank Bldg. FEderal 9-7711

Discount Bankers Serving Manufacturers of LP Gas Equipment

Buehler plant consolidates manufacturing facilities

The manufacturing facilities formerly carried on at two factories, one in Los Angeles and the other in Cucamonga, Calif., are being consolidated through a new modern fabricating plant constructed for Buehler Tank & Welding Works at Orange, Calif.

Provisions from stress relieving of large vessels as well as many other new and modern processes are being incorporated.

A number of cranes and other heavy duty handling equipment will be so located within the buildings to facilitate maximum efficiency in the flow of L. P. gas and anhydrous ammonia tanks through the factory. Facilities for doing extra heavy custom products are also being erected.

The new plant will enable the company to broaden its scope of operations in the southern California areas as well as to more conveniently handle shipments within the western states. Address of the factory is at 325 Vista St., Orange, Calif.

1956 predicted to top 1955 in gas appliance sales

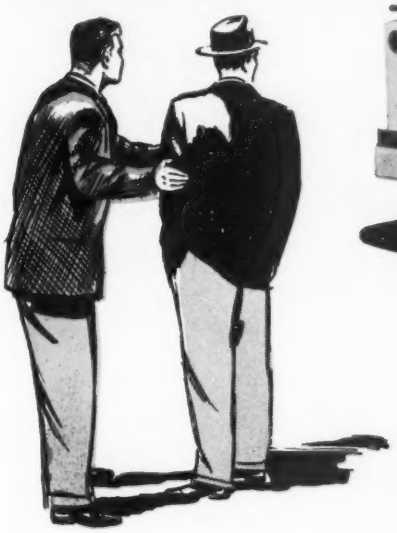
While 1955 was a record sales year for many types of gas appliances and equipment, 1956 will be an even better year, Harold Massey, managing director of the Gas Appliance Manufacturers Association, told more than 300 delegates attending the 21st annual meeting of GAMA at the Greenbrier, White Sulphur Springs, W. Va.

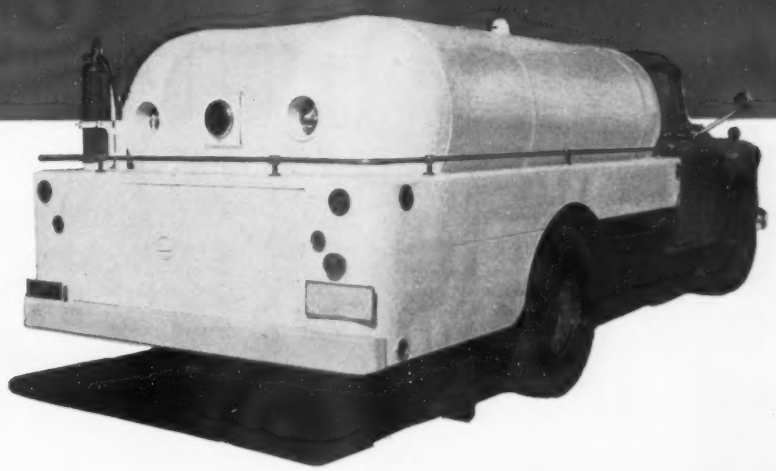
Gas-fired furnaces, gas boilers, gas water heaters and gas clothes dryers will establish new sales peaks this year, Mr. Massey told the group. He

All the features you want are in

One Model

of the LMC Home Delivery Unit





5 Reasons why the LMC gives you *more value per dollar!*

1. Engineered Plumbing and Pumping.
2. Lighter Weight.
3. Engineered for Strength, Balance, Convenience.
4. More Pleasing Appearance, Better Customer acceptance.
5. L.M.C. gives Better Service on Equipment.

Long after you've forgotten the original price of a piece of capital equipment, you remember how economical it operates, how efficiently it does the job, and how its general appearance impresses your customers. All of these features are incorporated in the design and engineering of the LMC Home Delivery Unit. Together they result in a performance that makes you, in profits, many times the original cost. All of the extras that add to your long range profit picture, but are sometimes overlooked in competitive models, are included in the LMC. Yet, the LMC Home Delivery Unit is competitively priced.

WRITE FOR ADDITIONAL INFORMATION, PRICES & PAYLOADS

LP Gas dealers throughout the nation have given Lubbock Machine products the strongest possible recommendation . . . that of re-ordering additional units after carefully checking the performance of their first LMC Unit.

LUBBOCK MACHINE & SUPPLY CO.

P. O. DRAWER 1589 • POrter 2-5269
LUBBOCK, TEXAS

Buy on the LMC *Budget Plan!*

LOW MILEAGE COSTS

also predicted that gas will become the nation's number one central-heating fuel, and that, for the first time, the number of homes centrally heated by gas will surpass the number of oil-heated homes.

Gas range sales will be stimulated, Mr. Massey said, by public demand for new features incorporated in 1956 models, particularly such innovations as the top burner heat control, oven meat thermometers and rotisseries. He added that mounting demand for built-ins, especially in new housing, will also help to keep range sales in the right direction.

One of the two new barges for transporting anhydrous ammonia fertilizer recently placed in service by Mid-South Chemical Corp. The barges transport ammonia on the Mississippi river and Intracoastal Waterway from ammonia manufacturing plants in Louisiana to Mid-South's network of new terminals, which include installations at Harlingen, Texas, New Iberia, La., Memphis and Peoria, Ill.

Special barges transport AA for Mid-South Chemical

Barges having a capacity of approximately 1000 tons each were placed in service in May by Mid-South Chemical Corp., Memphis, for transporting Big "N" anhydrous ammonia fertilizer. The specially constructed barges were built by Ingalls Shipbuilding Corp., Pascagoula, Miss.

The first barge load of ammonia was unloaded at the new Peoria, Ill., terminal the middle of May.

From storage facilities at subscribed points, the ammonia is transported by tank car and highway transports to more than 200 distributing stations, which are situated at strategic locations within a 150-mile radius of the terminals.

John Wood purchases Anchor Post division

John Wood Co. has purchased the Fluid Heat Division of Anchor Post Products Inc., Baltimore, according to J. B. Balmer, president of John Wood, manufacturers of water heaters, tanks, gasoline pumps and metal dairy equipment.

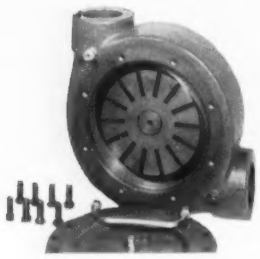
The transaction, involving upwards of a million dollars, covers the machinery, equipment and inventory in the Baltimore plant and also the plant site and buildings, machinery and inventory at Red Oak, Iowa, Mr. Balmer said.

"By reason of this expansion," Mr. Balmer explained, "John Wood Co. will soon be marketing a complete

HIGH VOLUME
AT DIFFERENTIAL PRESSURES
UP TO 300 P.S.I.
Without Need For Vapor Return Line

Summer is here, and you are having to work against high pressures. This is the season when the outstanding performance of "Superior LPG Precision Rotary Pumps would really save time and money for you, by enabling you to fill tanks and cylinders faster.

This efficient pump is capable of high volume at low pump and engine speeds. It eliminates the use of vapor-hose, shortens delivery time, and lightens work. Easy to install. The base fits the average truck mounting without need for piping change. Available in 75 and 110 G.P.M. sizes. Write for descriptive folder and name of nearest Distributor.



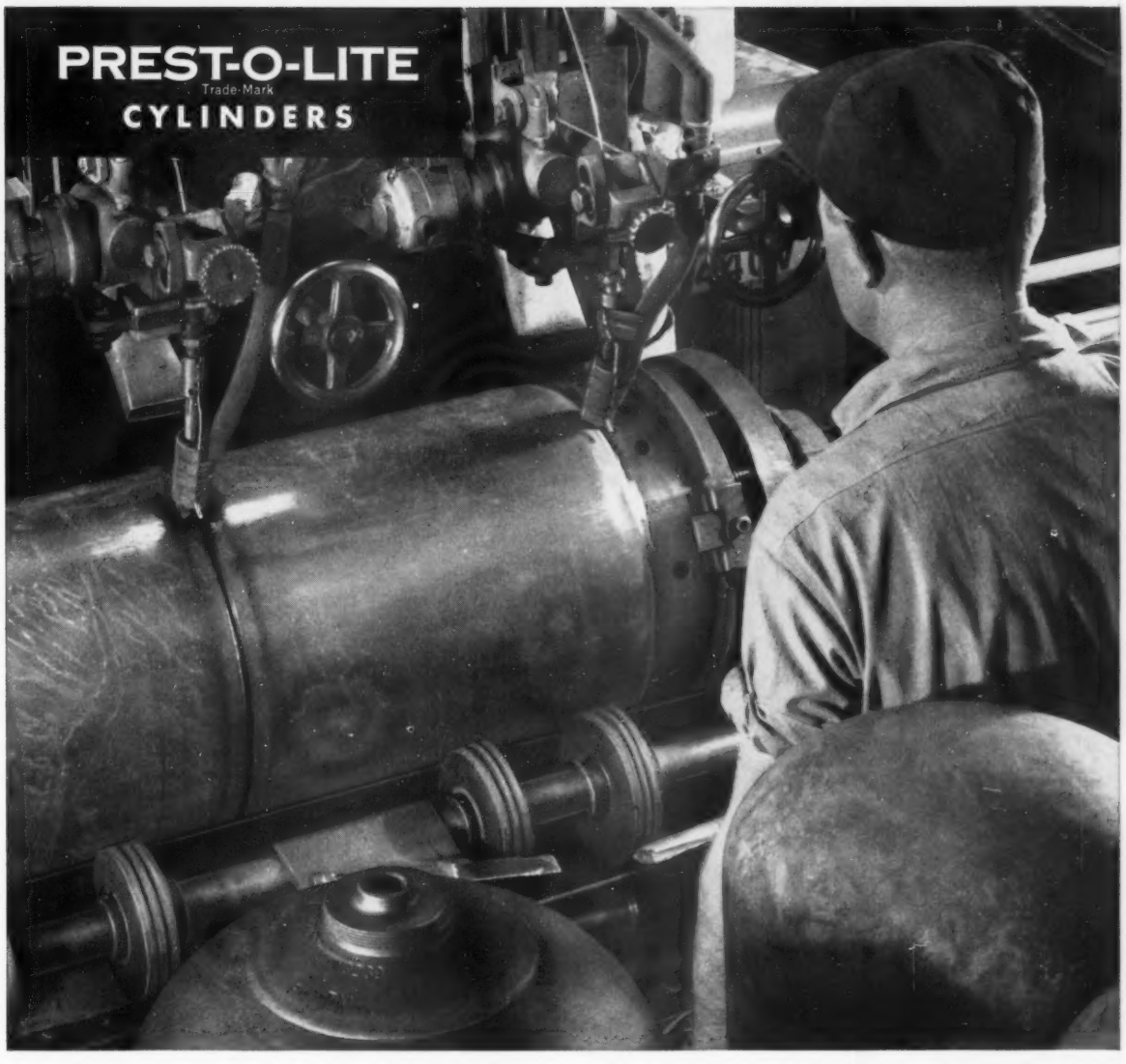
Superior LPG PRECISION ROTARY PUMP

The compact, light-weight Superior Pump has a two-lobed cam with double pumping cycle for each revolution. Within the rotor are 14 hydrostatically balanced, pressure-activated, self-adjusting and self-lubricating carbon vanes that provide positive pumping action. No metal-to-metal contact; no wear, except on the carbon vanes which can be replaced easily.

New Model TC

SUPERIOR INDUSTRIES, INC.
1007 National Bank of Commerce Bldg.
NEW ORLEANS 12, LA.

INQUIRIES INVITED FROM DISTRIBUTORS

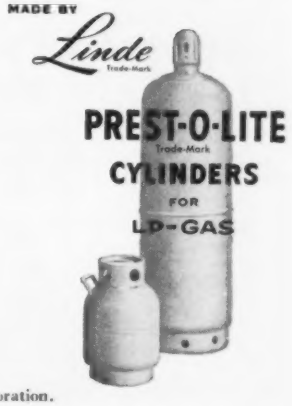


Uniform Strength

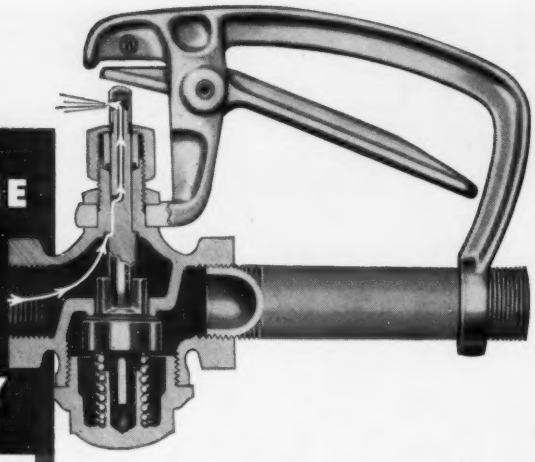
A cylinder to contain compressed gas is just as strong—or as weak—as the seam that holds it together. That's one reason why LINDE is so particular about the welds in PREST-O-LITE cylinders.

To be sure of getting welds that are always dense, clean, and uniformly strong, LINDE uses automatic UNIONMELT welding, exclusively, for this purpose. This is the submerged melt electric welding method developed by LINDE. UNIONMELT welding assures perfect seams and your complete satisfaction. And cylinders made this way cost you no more.

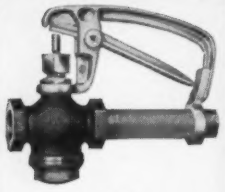
Find out *now* why the quality built into PREST-O-LITE cylinders has made them first choice of discriminating buyers. Just call or write the LINDE office nearest you. LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York 17, N. Y. *In Canada:* Linde Air Products Company, Division of Union Carbide Canada Limited, Toronto.



The terms "Linde," "Prest-O-Lite," and "Unionmelt" are registered trade-marks of Union Carbide and Carbon Corporation.



DISPENSE LP-GAS SAFELY, QUICKLY



No. 8009
LPG QUICK-OPENING
GLOBE VALVE

No. 8001-LPG GLOBE VALVE

Safeguard Design Directs Hose Back Pressure Away from Operator

This Ohio Brass valve was designed to bleed off trapped LP-Gas slowly and harmlessly, in a direction *away* from the operator's hand.

The O-B No. 8009 has a special escape port in the stem. When the lever presses against the stem, no gas can escape. But after the LP-Gas is dispensed and the lever released, gas trapped in the line escapes through the port which is aimed away from the operator's hand.

Both the No. 8009 and its companion globe valve have been listed by Underwriters' Laboratories for use on LP-Gas. The No. 8009 comes in three sizes — ½, ¾ and 1-inch. The No. 8001 Globe and companion angle valves are available in a complete size range from ⅛ through 3 inches.

For additional information on Ohio Brass valves for LP-Gas service, send for Bulletin 1345-V.

Ohio Brass

MANSFIELD OHIO, U.S.A.

4689-V

line of furnaces and conversion burners, and also a unique type of summer air conditioning units."

Included in the line and to be called John Wood Fluid - Heat and John Wood Fluid-Aire, is heating equipment for both gas and oil that encompasses a wide range of sizes from industrial to the smallest known domestice application; also air conditioning equipment for domestic use.

Whirlpool-Seeger Corp. announces new distributor

Jack Sparks, general sales manager, distribution, Whirlpool-Seeger Corp., announces that RCA Victor Distributing Corp., Davenport, Iowa, has been appointed distributor of RCA Whirlpool home laundry equipment.

The new home laundry equipment distributor replaces Davis Davidson Co.

L. A. Baumgartner is vice president in charge of the RCA Victor Distributing Corp., Davenport division. The company continues as distributor of RCA Whirlpool freezers and air conditioners and RCA Estate ranges in the territory, which is composed of 15 counties in Iowa and six counties in Illinois.

New plan will extend Servel's warranty period

Air conditioning division of Servel Inc. announces a new "quality assurance plan" that extends the warranty period of refrigeration units in "All-Year" air conditioning models from five to ten years.

According to W. J. Hoeing, sales manager, the plan is being offered to the company's air conditioning distributors on an optional basis, and includes, in addition to the extended warranty, a labor allowance to cover the average cost of unit replacement for the entire 10-year period.

The plan is now available for Servel's gas-operated 2-ton, 3-ton, and 5-ton conditioners.

Servel has made the new warranty and labor allowance plan retroactive to cover all units shipped from the factory on or after Nov. 1, 1955, the start of the company's current fiscal year.

Steel plate main item of discussion at meeting

Formulation of plans to secure more steel plate for LPG systems and storage tanks during the critical steel shortage was the main item of busi-

Keep Up with L. P. gas Developments Each Month

BUTANE-PROPANE News

by subscribing to

198 SOUTH ALVARADO STREET, LOS ANGELES 57, CALIFORNIA

See Page 2 for Foreign Rates

☐ Check herewith ☐ Bill me ☐ 1 year $2.00 ☐ 2 years $3.00

Name_____ Title_____

Firm_____

Street_____

City_____ Zone____ State_____

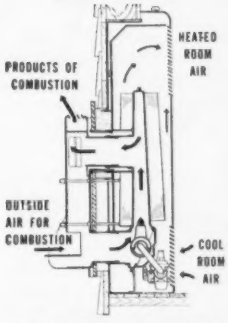
PICK UP THAT

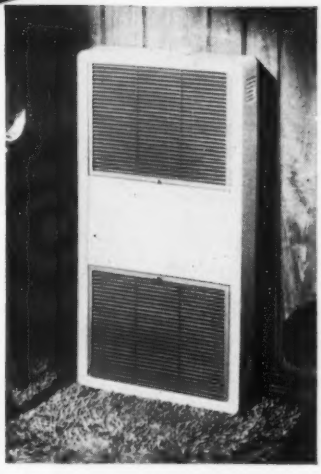
HARD-TO-HEAT-ROOM PROFIT

THE EASY WAY!

SAF-AIRE GAS HEATING

Heat without hazard! Saf-Aire burns gas in a ceramic lined chamber completely sealed from the room air being heated





"SAFETY-SEALED"

Heats one room or an entire house

There's nothing like Saf-Aire for heating added rooms—hard-to-heat rooms—enclosed porches—garages—workshops—bathrooms—attic apartments—complete homes. Amazingly compact and styled to harmonize with any room decoration.

CLEANER, SAFER, EASIER TO INSTALL

- **Uses only outside air for combustion—no stuffy rooms**
- **Easily installed through any type wall**
- **No chimney required—combustion products are vented to the outside, can't enter the room**
- **No ducts or electricity needed**
- **"Zone Controlled" warmth for every room**
- **Costs less to install and maintain**
- **Burns all gases, including L.P.**
- **Ceramic lined heat exchanger for long life**

A PRODUCT OF SW STEWART WARNER

SEND FOR LITERATURE

STEWART-WARNER

U. S. MACHINE DIVISION— Dept. AT-76, Lebanon, Indiana

QUALITY PRODUCTS

JOHN WOOD

SINCE 1867

For QUALITY and SERVICE

Glass-lined or Galvanized

JOHN WOOD Automatic Gas Water Heaters are highest-quality heaters, known for their dependable, trouble-free performance. Nationally advertised. Fully warranted. A wide variety of sizes, models, and prices to meet any sales situation.

JOHN WOOD

AUTOMATIC *Gas* WATER HEATERS

Made and warranted by one of the country's oldest, most reliable water heater manufacturers. Conshohocken, Penna. and Chicago, Ill. Approved by the American Gas Association and endorsed by Mrs. America®.

ness discussed at the spring meeting of the National Tank Manufacturers Association held in Shreveport May 18 and 19.

C. J. Bender, Trinity Steel Co., Dallas, serves as president of the Association. W. M. Wattman, Anco Manufacturing & Supply Co., Tulsa, is secretary-treasurer. Forty representatives of tank manufacturers attended the conference.

Several constructive suggestions were made to improve steel shortages in the LPG industry and for securing additional tonnage. F. T. Carpenter, United Petroleum Gas Co., J. L. Tullis, J. B. Beaird Co., Inc., A. J. Hall, Burnham Corp., and B. R. Sprayberry, Texas Boiler & Machinery Co., participated in the panel discussion on this subject.

R. W. Creamer, Creamer & Dunlap Inc., B. C. Doggett, J. B. Beaird Co. Inc., and Ed H. Gill, Mississippi Tank Co., brought reports on the "Use of T-1 Steel for Transport Tanks in the LPG Industry." A. W. Crowley, McNamar & Crowley Inc., presented a report pertaining to the tank fabricators section meeting held in Chicago during the LPGA Convention.

Ensign constructs factory in Fullerton, Calif.

Coincident with its 46th anniversary the Ensign Carburetor Co., an independently owned and operated firm, has begun construction of a new factory in Fullerton, Calif.

Over the years Ensign has invested large sums in scientific laboratory equipment and research in the fields of automotive fuels and carburetion. New manufacturing facilities from foundry to finished product including a testing laboratory, will speed up shipment of carburetors, regulators and filters to Ensign's worldwide markets.

From the new factory in Fullerton will be supplied to Ensign dealers in Western and Mid-Continent territories complete carburetion units. Ensign's Chicago assembly and service plant will receive its sub-assemblies directly from the plant in Fullerton.

This bus, a converted city transit type, is a traveling sales and service showcase for Bryant-Whitesell of Minneapolis. It is the idea of Roy Whitesell, (center) president of the company. On Mr. Whitesell's left is Chet Bergman and on his right is Don Hunt.

Herrin and wife winners of New York-Paris flight

Winning a free round trip New York-to-Paris flight, with stops enroute if desired, was the highlight of the recent annual LPGA convention and trade show for Mr. J. R. Herrin and his wife of Charleston, S. C.

Convention delegates were invited to register for the free New York-Paris flight at the Squibb - Taylor booth and the drawing for the lucky number was held on the last day of the convention. Approximately 3500 L. P. gas dealers from Canada, Europe, Mexico and the United States attended the convention and more than half the delegates registered for the free vacation flight.

Climaxing the four day session, Pat O'Brien, famous TV-screen star who was featured on the convention program, drew out the winning number and made the presentation to Mr. and Mrs. Herrin. The Herrins were not present when their winning ticket was drawn and when friends deluged their hotel suite with calls, thought they were being victimized by pranksters. Later, convinced, they arrived at the exhibit hall, Conrad Hilton Hotel, Chicago, where Mr. O'Brien made the award.

A second-hand bus becomes a "showcase" on the road

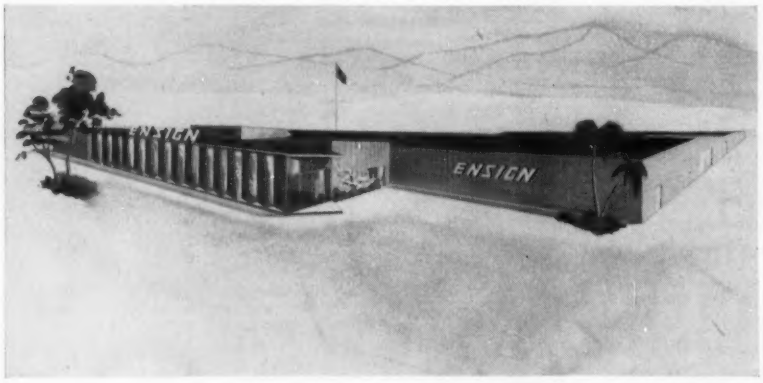
A second-hand 21-passenger bus converted to a combination salesroom and service department is the newest brainstorm of Roy Whitesell, Bryant Whitesell Co., distributor for Bryant.

Mr. Whitesell started his Bryant "showcase" on the road early in the fall of '55. Right now its scheduled through August. It carries a representative selection of everything that Bryant makes, and service continues through a regular service board for both natural gas and LPG.

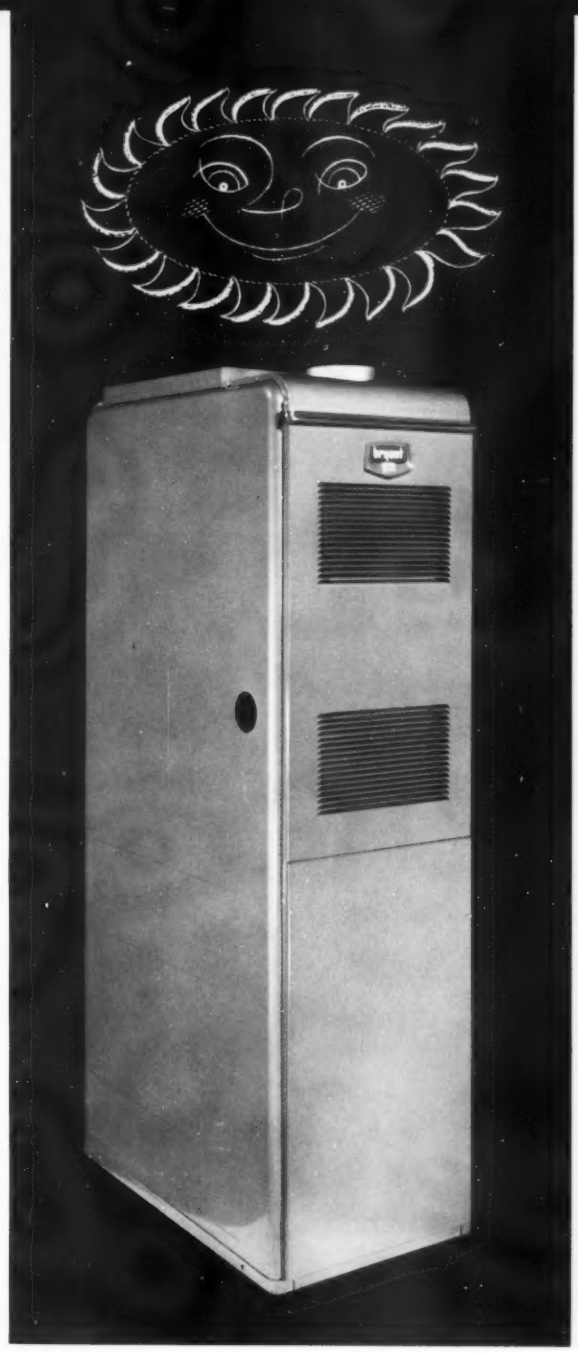
The Bryant-Whitesell territory covers all of Minnesota, the northwest part of Wisconsin and the eastern half of North Dakota. Mr. Whitesell expects to log 60,000 miles in his bus this year.

Vacation cruises will be awarded by Magic Chef

Magic Chef distributors, their salesmen and wives have a chance to win a vacation cruise on the Great Lakes lasting eight days, through a nationwide sales contest that started April 15 and will last until July 20.



Ensign Carburetor Co.'s new factory in Fullerton, Calif. covers over 110,000 sq ft. It is located on a 12-acre site and will house a most modern engine dynamotor laboratory.



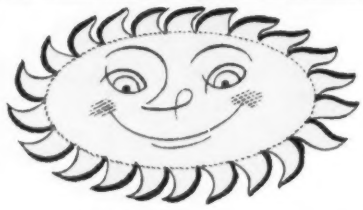
GROW BIGGER WITH

bryant

and here's one way you can

GROW BIGGER WITH

bryant



REAP THE PROFITS FROM BRYANT'S FIELD-TESTED and proven

MONEY BACK GUARANTEE PLAN

that increases furnace sales

The finest, fairest satisfaction guarantee offer ever made

A sale plan that offers guaranteed furnace performance!

If your customer isn't satisfied he gets back full furnace cost!

A straight forward no-strings-attached offer that makes sales

This is a proven furnace sales-building promotion that will double and treble your heating sales in the off season. It is open *only* to qualified Bryant dealers. Learn how you can qualify to participate in this proven sales-building promotion.

and here are 8 more reasons why you'll GROW BIGGER with BRYANT

1. Your customers know and trust the name Bryant . . . famous for 47 years as the leading name in home comfort.
2. From small home to mansion there's a Bryant to fit the budget and the need in gas or oil furnaces, boilers, air conditioners, space heaters, unit heaters, water heaters.
3. You build customer confidence when you install Bryant . . . the highest quality home comfort equipment built.
4. You profit more with Bryant because of the Bryant dealer development program, the most complete in the industry.
5. You get sales-building tools that increase sales and profits.
6. You have the help of a nearby Bryant distributor who gives you complete engineering, sales and service help.
7. You are backed by powerful national advertising.
8. You get complete co-op advertising to build sales in your own community.

BRYANT EQUIPMENT FEATURED IN "MONEY BACK" PROMOTION
Model 26 Boiler
Model 319 Furnace
Model 318 Furnace
Also Model 225 Boiler

Be Mr. B. in your community!

Every home owner who is thinking about new heating equipment for his home will want to know the details of Bryant's exclusive *Money Back Guarantee*. That's why it has been a sure-fire prospect getter wherever it has been used. Get the details today. Learn how simple and straight-forward it is. For the name of your nearby Bryant distributor, write, Bryant, 48 Monument Circle, Indianapolis 4, Indiana.

grow bigger with **bryant**

dependable Rural Fuel Delivery

MASTER-CRAFTED BY
COLUMBIAN
SINCE 1893

SAFE-T-TWIN
LPG Truck Tank

Almost every delivery of LPG must go "off the pavement" — and that's where good balance, low gravity center and easy maneuverability count most in a truck tank. Neither rutted roads nor low-hung branches, nor powerlines or close quarters can stay this Columbian SAFE-T-TWIN LPG delivery truck from the swift completion of its appointed rounds!

As trim and handsome as you'd wish, the SAFE-T-TWIN is a travelling billboard advertising your product and services. With a capacity of 1700 water gallons of LPG you can deliver both Propane or Butane in the same load. The piping arrangement is valved for service from either tank. The small diameter tanks (40½" I.D.) provide excellent balance with a lower center of gravity and better load distribution.

Details of the SAFE-T-TWIN construction include ASME 1952 Code 250 lbs. working pressure tanks, with hemispherical heads and countersunk relief valves. The tanks are manifolded on liquid and vapor and equipped with 2" Viking KK 200 Propane pump with mechanical seal, 1¼" Neptune #433 meter with printing counter. Motor driven dual reel with liquid and vapor hose housed in full width rear cabinet. Enclosed cabinets ahead of wheels and auxiliary truck fuel tank are optional accessories. Complete ICC lighting and wiring is provided.

Write today for complete, illustrated literature.

INDUSTRIAL STEEL BUILDINGS

Sound, permanent steel buildings, easily, inexpensively erected. Pictured is 30 x 50 ft. cylinder filling house with 10 ft. sidewalls. Also ideal as pump houses, warehouses, offices and show rooms. Write for 16-page catalog "The Magic of Steel" fully describing sizes and uses of Columbian master-crafted steel buildings.

COLUMBIAN STEEL TANK CO.

P. O. BOX 4048-C • KANSAS CITY, MO.

Reg. U.S. Trade Mark

STEEL, Master-Crafted by Columbian . . . First for Lasting Strength

Announcing the contest, John W. Holzman, vice president in charge of sales, pointed out that three separate categories of distributors have been set up in order to compete for the 18 vacation cruises.

The contest is based on sales of all 1956 Magic Chef domestic ranges except burner units of built-ins, and all 1956 gas console heaters and pot-type oil heaters.

Six "Magicruise" trips will be awarded to the one winning distributor in each of the three categories. The trips will be for the three men and their wives. At least two of the men must be distributor salesmen; only one can be from the distributor management. Quotas for salesmen are arranged by the distributors, not by Magic Chef.

The all expense cruises include round trip transportation from the winner's home and back, expense money en route, a party in Chicago, and sight seeing trips at Mackinac Island and Niagara Falls. The cruise is on the SS North American covering 2200 miles of the Great Lakes.

David Pigford (left) executive of Westralian Farmers Cooperative Ltd., Perth, Western Australia, talks with Carl Abell, editor BUTANE-PROPANE News, while in the office to secure books and publications which will be needed by his organization to initiate L. P. gas into that territory.

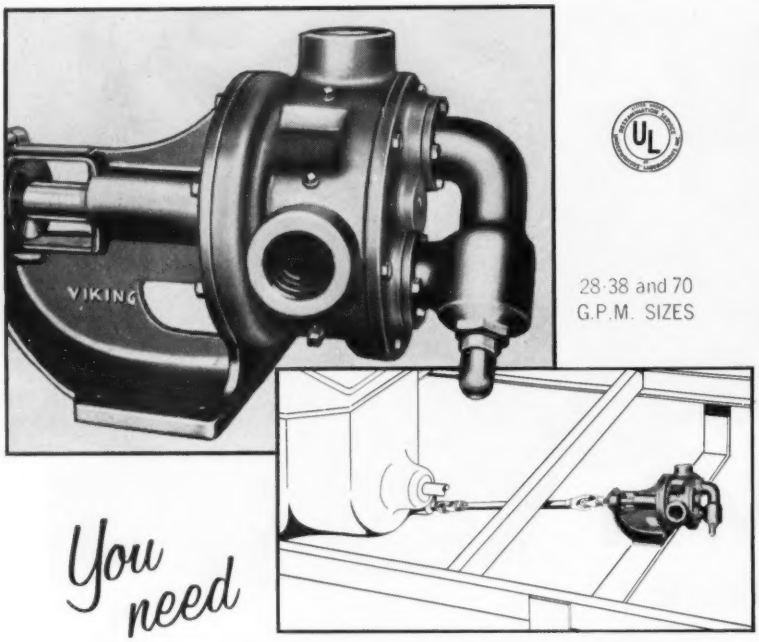
Western Australia to have LPG in a few months

Within the next few months Westralian Farmers Cooperative Ltd., Perth, Western Australia, plans to initiate L. P. gas service in that territory. David Pigford, executive of that company, has been in the United States investigating equipment and operating methods of the industry, and securing agency agreements for lines that will be needed in developing the Australian market.

While in this country Mr. Pigford received special instruction in the installation and servicing of Ensign carburetors. He also visited the BUTANE-PROPANE *News* office to secure the books and publications which will be needed by his organization.

Whirlpool-Seeger expands Evansville division

An expansion program for the Evansville, Ind., division of Whirlpool-Seeger Corp. which will cost in excess of $19 million this year began in May with work on a 90,000 sq ft addition to the existing 962,000 sq ft



28-38 and 70 G.P.M. SIZES

You need

VIKINGS FOR PROVED LP-GAS TRUCK PUMP PERFORMANCE

Thousands of Viking LP-Gas truck pumps have proved themselves superior for giving long, dependable service. Their . . .

1. *Selection of handy port location for any mounting arrangement.*
2. *Dry liquid type mechanical seal.*
3. *O-ring gaskets for non-leak operation.*
4. *Compactness.*
5. *Bearings requiring NO lubrication at any time.*
6. *Lubricated-for-life, rigid thrust bearing, and*
7. *Integral mounted safety or return-to-tank valve.*

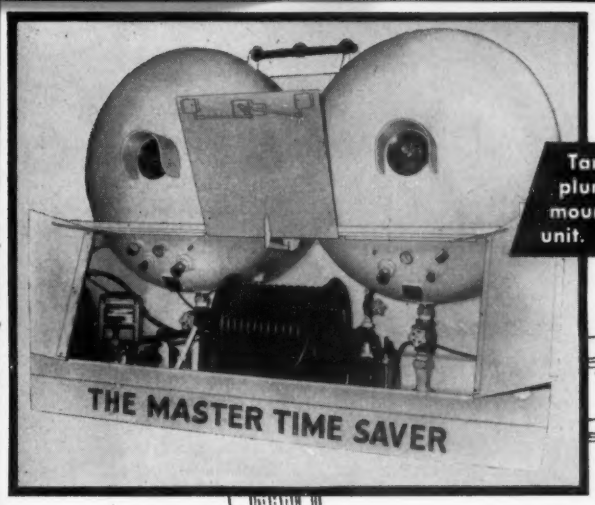
. . . have been the real reasons why they have proved themselves the superior pumps in the LP-Gas industry.

Be sure you specify Viking. Accept no substitutes. Ask for catalog Section Hb today.

See our Catalog in the BPN CATALOG

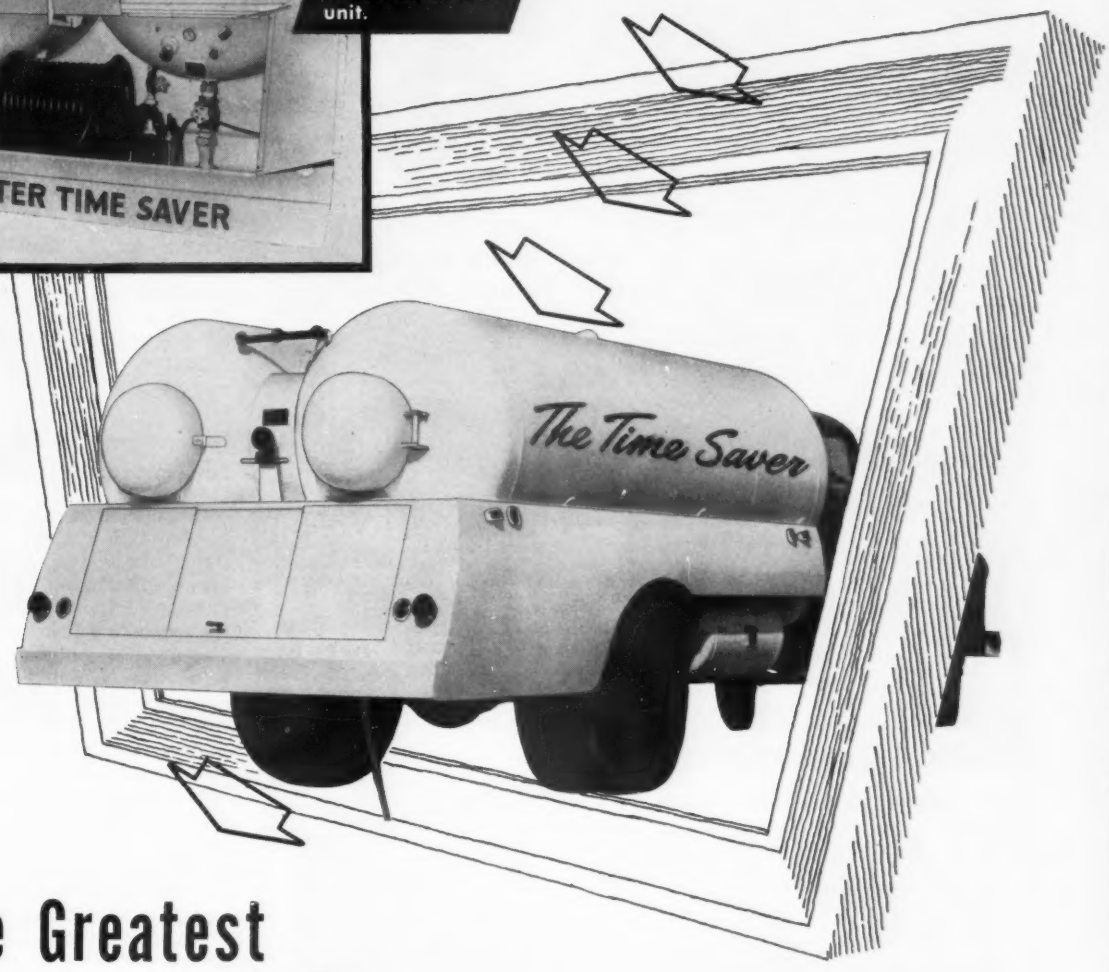
VIKING PUMP COMPANY

Cedar Falls, Iowa, U.S.A. In Canada, it's "ROTO-KING" Pumps



Tank, pump and plumbing . . . all mounted as one unit.

Patent Applied For



...the Greatest Masterpiece

IN TANK CONSTRUCTION

We Provide easy-convenient financing

PRODUCTION MADE

PRODUCTION PRICED

Our engineers have spent many years in the manufacture of truck tanks and we spent two years in developing *The Time Saver* before we put it on the market. We were determined to make the best truck tank that could be made at any price.

Available in open end for mild climates or closed end for protection against snow and ice.

MASTER TANK & WELDING

ANOTHER MASTER PRODUCT

P. O. Box 5146 • DALLAS, TEXAS • Phone PRospect 2441

For L. P. Bulk Storage Leading Firms Pick **NELSON**

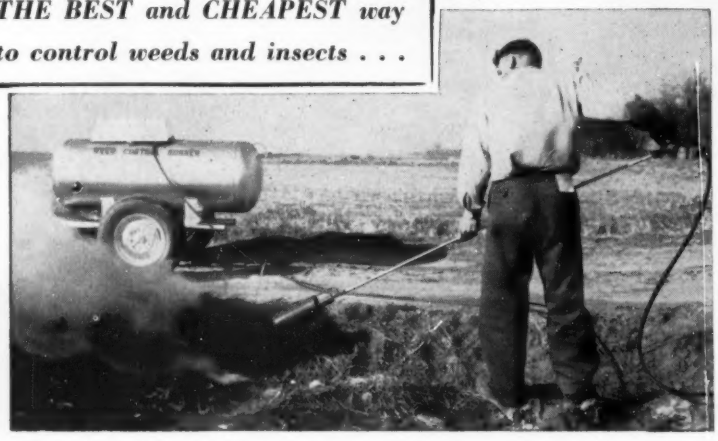
There are over 250 SYSTEM NELSON bulk plants for the storage of LP Gas and Anhydrous Ammonia located in 25 states. Take advantage of our experience and get extra value and service on your next storage problem. Contact us for a meeting with an experienced storage engineer.

SYSTEM NELSON

EDWARD S. NELSON, Ltd.
Clarksdale, Mississippi

THE LEADING NAME IN THE BULK STORAGE FIELD!

THE BEST and CHEAPEST way to control weeds and insects . . .



Red Jet Weed Control Burner

USES LIQUID L. P. GAS — The Most Economical Burner Yet Designed.
- Uses Full Tank Pressure.
- Throws Flame 8 to 12 Feet.
- Flame Temperature 2500° Plus.
- Burns 12 to 25 Gallons Per Hour.

The RED JET Has Many Applications in Farm, Commercial and Industrial Uses!
- Kills All Annual Weeds.
- Kills Insects — Destroys Their Eggs.
- Prevents Reseeding.
- Decreases Labor Cost in the Fields.

Red Jet is the product of four year's experience in manufacturing weed control burners for use with liquefied petroleum gas.

Manufactured by **NORTHWEST FABRICATORS**
NYSSA, OREGON

Plant No. 2, acquired last year from International Harvester Co., it is announced by John W. Krueger, vice president of Whirlpool - Seeger and general manager of the Evansville division.

The 300 x 300 x 52 ft extension to Plant No. 2 is scheduled for occupancy by September 15, with production planned for early fall.

When the present expansion plan is completed, Plant No. 1, the former Seeger Refrigerator Co. property, will be devoted exclusively to production of air conditioning units and components for refrigerators and freezers. Plant No. 2 will fabricate and assemble refrigerators and freezers. It will also continue as the main office for executive, engineering and administrative personnel of the division.

November completion set for Insurance building

Completion is scheduled for November 1956 of a new four-story addition to the Pan American Insurance Co.'s building. The building will provide additional office quarters for the expanding Pan American Fire & Casualty Co. and Pan American Insurance Co. of Houston. Earl W. Gammage, president of the Pan American group, previously announced the signing of a long-term lease for more than $1 million.

The structure will adjoin the present two-story building built in 1953. The Pan American Insurance Companies will continue to occupy the second floor of the present building and will also occupy both the second and third floors of the new addition, according to Mr. Gammage.

The Pan American organization is in its seventeenth year of operation and is licensed to do business in 14 states located primarily in the south and southwest.

Nine firms appointed distributors for Servel

Nine firms in Southern California have been appointed installing distributors for Servel all-year gas air conditioning equipment, it was announced today by W. J. Hoeing, sales manager of Servel's air conditioning division.

The newly appointed installing distributors are:

Russell Heating & Air Conditioning Co., Van Nuys; B. V. Ezell Co., Corona; Marvin D. Shafer Co. Inc., Los Angeles; Don C. Glenn Heating & Air Conditioning Co., Glendale;

How acf makes SMALL TANKS SAFE

Many tanks look and cost the same, but **acf** tanks have a vital, invisible difference that means safety with a capital "S". Huge ovens eliminate stresses set up during forming and welding, give you and your customers extra peace of mind.

Why settle for less than all these **acf** tank features: X-raying, Hartford Steam Boiler Inspection, smooth exteriors and complete stress relieving.

acf small tanks are available for prompt delivery for L-P gas, anhydrous ammonia, and other gases or liquids under pressure. Write Department B-7, American Car and Foundry Division, **acf** Industries, Incorporated, 30 Church St., New York 8, N. Y.

ONLY acf OFFERS ALL THESE FEATURES

Complete stress relieving eliminates stresses set up during forming and welding... restores resistance to temperature changes or pulsating loads.

Radiography assures freedom from weakening slag inclusions, porosity, or undercutting.

Hartford Steam Boiler Inspection assures all tanks meet standards of ASME 1952 W-SR and Underwriters' Laboratory Approval.

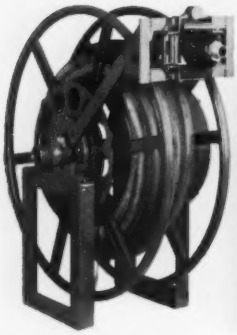
acf *FIRST IN QUALITY*

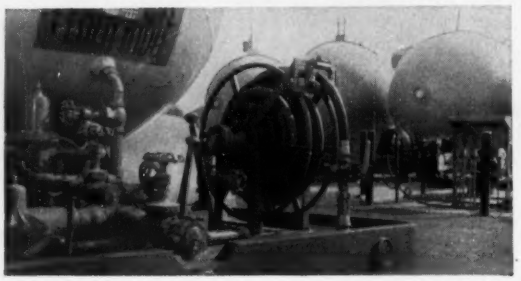
STORAGE TANKS · SAFETY VALVES

ACE SPRING REELS

Are Inexpensive to OWN—OPERATE!

- **Original Cost Is Low.**
- **Installation Is Simple.**
- **No Drag On Your Battery.**
- **You ADD Years To the Life of Your Hose.**





SPRING OPERATED MODEL — SERIES 2100
Available for single or double hose on one reel.

For "REEL" Satisfaction — Write ACE Today!

Harry Horn, of Anaheim, Calif., — one of the West's first LP-Gas dealers—has chosen Ace Hose Reels for his fleet of bulk delivery trucks. Shown here is his latest Spring Operated Reel. He recommends them highly for ease and economy of operation.

Series 2100 has many outstanding features:
They conform to all safety rules set up for the LP-Gas Industry . . . All pipe fittings are made of forged steel to comply with NBFU . . . Equipped with high pressure Chicksan Joints . . . High quality steel spring easily rewinds 50 ft. of 1 in. hose . . . Factory lubrication lasts for life of spring.

ACE **HOSE REEL CO., LTD.**
5466 ALHAMBRA AVE., LOS ANGELES 32, CALIFORNIA

The Thermolaire line includes vented and unvented circulators, stationary radiant heaters and portable heaters in variety of sizes. All AGA approved. Cast iron burners with interior baffle and raised ports, radiants interchangeable, chrome hearths, interior of circulators baffled for cooler cabinet. Manual and automatic heat controls available. Phone or write for prices and illustrated literature.

Famed Thermolaire gas heaters are an old, established complete line which commands wide popularity wherever sold. Thermolaire heaters are easy to sell because they have strong customer appeal in appearance, performance and price.

Thermolaire styling and design are extra attractive, with a soft, mellow coppertone baked enamel finish that harmonizes with other furnishings. Better still, Thermolaire is a highly efficient and serviceable heater, thus combining heating comfort with beauty.

BIRMINGHAM STOVE & RANGE COMPANY
Builders of Fine Stoves For Over 50 Years
BIRMINGHAM, ALABAMA, U.S.A.

Gough Brothers Heating Co., Pasadena; Wright's Sheet Metal Manufacturing Co., Colton; Allied Air Conditioning Co., Pomona; J. M. Connell Co. Inc., Palm Springs, and Cliff Gentry Sheet Metal & Refrigeration, Indio.

Servel's air conditioning line includes gas operated equipment that provides both cooling and heating with a single unit.

National Council receives honorable mention award

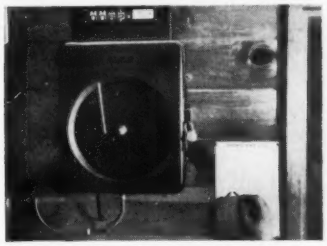
An honorable mention among the annual awards presented by the Chicago Federated Advertising Clubs went to the National LP-Gas Council advertising for 1956. The award was made in the category of best farm paper advertising campaign in black and white and was the only honorable mention in its field. The CFAC awards constitute one of the nation's most coveted advertising honors.

Did you know?
TRIPLE SPEED!
IN THE TIME IT TAKES AN ORDINARY ELECTRIC HEATER TO SUPPLY ONE BATH, MODERN LP-GAS CAN HEAT 3. NATURALLY, GAS HEATS WATER 3 TIMES FASTER... AND AT LOWER COST, TOO!
A TINY GAS FLAME CAN MAKE YOUR HOME COOL AS AN IGLOO!... AND AT LOW COST, TOO! NOW THERE'S A COMPACT NEW LP-GAS UNIT THAT COOLS IN SUMMER, HEATS IN WINTER! A DOUBLE BARGAIN!
NATIONAL LP GAS COUNCIL
LOOK FOR THIS SEAL, THEN BUY WITH CONFIDENCE!
NEWEST THING IN IRRIGATION PUMPING 2200 YEARS AGO WAS ARCHIMEDES' SCREW PUMP.
NEWEST THING IN IRRIGATION TODAY IS LP-GAS, THE CLEAN, DRY FUEL THAT CUTS REPAIRS AND MAINTENANCE IN HALF.
SEND TODAY FOR FREE 24-PAGE BOOK
Write to National LP-GAS Council
Dept. AA-3, 185 N. Wabash Ave., Chicago 1, Ill.

The Temperature Correction Slide Rule invented by Harold TenBrook, prevents over-delivery of propane due to cold-weather contraction, and under-delivery due to heat expansion. It corrects the amount delivered to its true volume at the standard 60-degree temperature.

He ruled out late delivery when he switched to Cities Service

This Truck will soon be dwarfed by one with a 10,200 gallon capacity, largest in the world. Like the others, the new unit will carry only Cities Service propane.



By Recording Degree Days Ready-Flame knows when customers need propane. It's typical of TenBrook's efficiency. Also typical is his choice of Cities Service as supplier.

Harold TenBrook, dynamic president of Ready-Flame, Inc., Kokomo, Indiana, is well known for two reasons:

He's the Midwest's oldest and largest independent propane distributor . . . and he's the inventor of the LPG temperature correction slide rule.

To a large extent, both these distinctions stem from his ability to eliminate inefficiency. With the LPG slide rule, he prevents lost revenue caused by over-delivery of propane during winter. And meanwhile, throughout his business he obtains maximum use of his equipment by measures such as unloading a 7200 gallon transport in 45 minutes!

"I became a Cities Service Distributor to stop lost time, too," says TenBrook. "Time lost waiting for my former supplier's deliveries! Now, as a Cities Service Distributor, I receive prompt delivery in the most critical weather, and the quality is always above NGAA specifications. In my 18 years in the propane business, I've never seen a supplier that could match Cities Service."

Like Harold TenBrook, you'll find many advantages to being a Cities Service Distributor: Highest quality propane . . . Multiple sources of supply . . . Delivery by huge rail and truck fleets . . . No supplier competition . . . Expert engineering, carburetion, and promotional assistance. For the whole profitable story, contact one of the offices below.

SERVICE! . . . Part of our name, part of our business

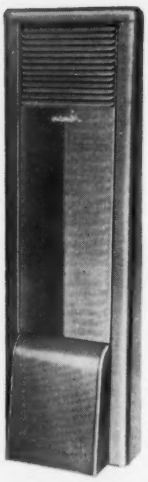
CITIES SERVICE

QUALITY PETROLEUM PRODUCTS

406 W. 34th Street, Kansas City, Missouri
500 Robert Street, St. Paul, Minnesota
20 N. Wacker Drive, Chicago, Illinois
6611 Euclid Avenue, Cleveland, Ohio

MEMBER LPGA

Be ready for the
BIG
Martin GAS HEATER
HEAT WAVE



The blower as shown is available on all models

*Wall heaters approved under 1956 AGA requirements

Enjoy the "good old" selling time

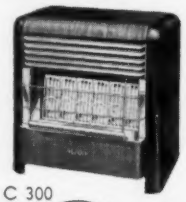
Stock and sell the complete line

Vented Space Heaters
8 models—15,000 BTU to 85,000 BTU

Vented Floor Furnaces
3 models—35,000 BTU to 70,000 BTU

Vented Wall Heaters*
5 models—25,000 BTU to 60,000 BTU

Unvented Space Heaters
23 models—10,000 BTU to 50,000 BTU



Every Martin Gas Heater is AGA approved for natural, liquefied and manufactured gases.

C 300

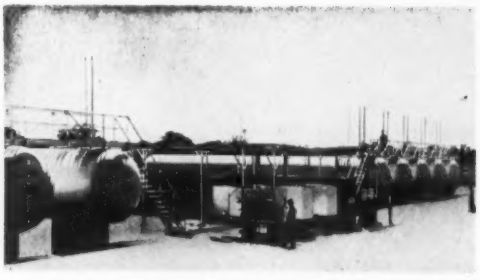
Send for complete catalog

Manufactured by
MARTIN STAMPING & STOVE CO.
Huntsville, Ala. Over 50 years heater experience

AUTHORIZED DEALER MARTIN GAS HEATERS

DRAKETOWN

PROPANE PLANT OF THE MONTH



ALLIED CHEMICAL & DYE CORPORATION

A combination propane and anhydrous ammonia plant designed and built by Draketown for Allied Chemical & Dye Corporation at La Platte, Nebraska.

Many other large and small manufacturers and utilities rely on Draketown for absolute dependability of gas supply; automatic or manual operation with savings all down the line. Over thirty-five years of gas engineering experience is built into every Draketown Plant.

DRAKE & TOWNSEND, Inc.
CONSULTING — DESIGN — ENGINEERING — CONSTRUCTION
11 WEST 42nd STREET, NEW YORK 36, N. Y.

Members of: American Gas Ass'n, LP-Gas Ass'n, American Petroleum Institute, National Fire Protection Ass'n, Canadian Gas Ass'n, Agricultural Ammonia Institute.

In accepting the award, George Schulte, managing director of the Council, said, "Winning awards is gratifying, but we didn't particularly design this campaign to win any prizes. Our chief aim is to promote public interest in L. P. gas and L. P. gas appliances. To that end, the current L. P. gas campaign produced by McCann - Erickson Advertising has distinguished itself by earning a top Starch Readership Rating and setting a record for the lowest cost per reader in the publication surveyed.

Roper appoints Triangle Industries as distributor

Triangle Industries Corp., Chicago, has been appointed a distributor for Geo. D. Roper Corp.'s "arrangeable" built-in gas ranges in the Chicago area. The company will warehouse a complete stock of Roper built-in units for sale to retailers, builders and contractors in metropolitan Chicago and surrounding area.

Triangle's entire sales force attended an introductory meeting at the Roper plant in Rockford May 4. Included among the visitors were Leonard Cohn, president; Walter O'Halloran, vice president in charge of sales; and H. Louis Gibbs, sales promotion manager.

J. A. Jenkisson, sales manager of Roper's special appliance division, in presenting the built-in units, discussed in detail the sales features incorporated in Roper built-in gas ranges. These included Tem-Trol, Bake-Master oven, available with or without "insta-matic" oven guardian, Silent-Roll smokeless broiler, Insta-Lite automatic ignition, and others, and 13 distinctive, decorator approved colors selected to harmonize with modern kitchen decor.

Representing Roper at the meeting were, in addition to Mr. Jenkisson, S. H. Hobson, president; E. Carl Sorby, vice president; R. R. Chapman, Chicago division manager; and H. M. Peters, Chicago manager of Roper's special appliance division.

General Gas shows 37% sales hike during 1955

General Gas Corp. sold 75.6 million gal. of L. P. gas during 1955, an increase of more than 37 per cent over 1954, according to the southern LPG firm's 1955 annual report.

In spite of the increase in gas sales and a 26 per cent total dollar sales increase to $31,452,815, net income dropped due to a program of consolidation of L. P. gas facilities, serv-

FISHER® Safety Relief Valves

FOR EVERY INSTALLATION

FOR DOMESTIC STORAGE CONTAINERS

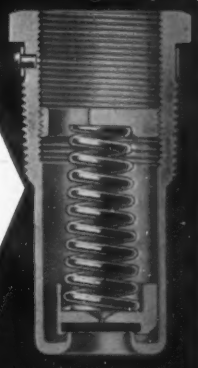
A COMPLETE RANGE OF INTERNAL SPRING TYPE SAFETY RELIEF VALVES WHICH MAY BE MOUNTED OUTSIDE THE HOOD ON STATIONARY ASME CONTAINERS.

FLOW	PIPE SIZE	TYPE NO.
1750 cfm	3/4"	H310
2490 cfm	1"	H235
4450 cfm	1 1/4"	H260

FOR MOTOR FUEL CONTAINERS

PROVIDES THE UTMOST IN SAFE AND DEPENDABLE PROTECTION FOR LP-GAS MOTOR FUEL SYSTEMS. ALL WORKING PARTS ARE FULLY RECESSED.

FLOW	PIPE SIZE	TYPE NO
Approved for 100 lb. ICC cylinders (Lift trucks, etc.)	3/4"	H348
For small ASME containers (Tractor, etc.)	1"	H360
For larger ASME containers (Trucks, buses, etc.)	1 1/4"	H385



FISHER GOVERNOR COMPANY

MARSHALLTOWN, IOWA · WOODSTOCK, ONTARIO

Eastern Office: 212 New Dickson Bldg., Westport, Conn.

LEADS THE INDUSTRY IN RESEARCH FOR BETTER GAS PRESSURE CONTROL

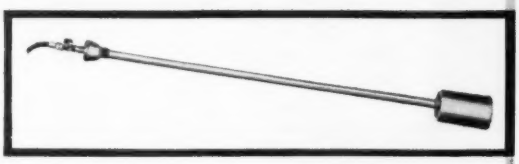
FISHER Since 1880

THE NEW *Weldit*
MELTERAMA
WITH REPLACEABLE BURNER ORIFICE

The T-3 MELTERAMA, used with the Weldit 4826-D Safety Check or High Pressure Regulator, gives instant, clean, controlled heat for all melting operations. Incorporating base and burner into one unit gives Stability and Convenience, and Weldit's revolutionary replaceable Burner Orifice adds efficiency and longer life. High and Low Heat Control.

"DESIGNED FOR A MULTITUDE OF USES"

B-1 WELDING JET SUPERHEATING TORCH



Weighing only 3 lbs. and of steel construction, the B-1 operates off of any standard propane tank at tank pressure. Length, 40½". Consumption, 26 lbs. per hour. Produces 653,800 B.T.U.

Weldit INC. • 990 OAKMAN BLVD. • DETROIT 6, MICH.

WHITE RIVER
Has Special Service For
NEW DEALERS

Send your driver down to pick up your new White River Propane Truck Tank unit. We'll give him the first hand experience of a "check-out run" over our own retail gas route, thoroughly explain every feature, and show him, right on the job, how to operate it for maximum efficiency. Just another one of the PLUS services you get from WHITE RIVER. Write today for prices and specifications on the complete White River Line.

Convenient Finance Terms On Both Tanks and Trucks

THE WORLD'S FINEST PROPANE TRUCK TANKS

WHITE RIVER DISTRIBUTORS, Inc.
TELEPHONE 570 BATESVILLE, ARK

SEE OUR AD IN THE CLASSIFIED SECTION

ice expansion, product development, plant refurnishing and installation of new equipment. Results of these costly 1955 activities, however, were already beginning to show in income during the final quarter of that year and the first quarter of 1956.

Sales during 1955 were especially good in the power field, the report states, including highway vehicles, plantation tractors, irrigation pumps, intra-plant mobile equipment, drilling rigs and airport ground equipment. All of these fields will be subjects for further development by the firm during this year.

Present underground storage reservoir capacity at the company's facilities in Gibsland, La., will be increased from 12.7 million gal. to 20 million gal. by the end of 1956.

Delta Tank Co., General's wholly owned subsidiary, moved into the field of building pressure tanks for the petroleum, chemical and petrochemical industries in 1955 and voluntarily withdrew from defense contracts.

At the end of 1955, General Gas had 2978 stockholders in 43 states, the District of Columbia and Canada, and 729,263 shares of stock were outstanding. Stockholders were increased by 36 per cent over 1954.

Election of queen sparks heating-cooling promotion

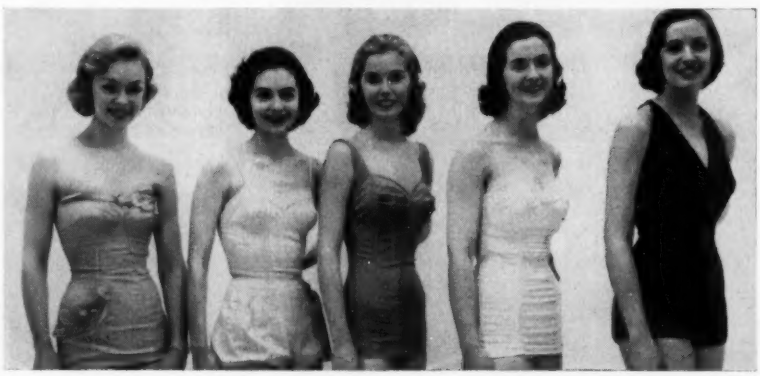
Election of Queen Comfort from among five candidates will be announced during National Better Heating-Cooling Week, which begins August 6.

A phase of the overall promotion campaign on hot water and steam heating and cooling being staged by the Better Heating-Cooling Council, the queen will be voted on by more than 50,000 heating and plumbing contractors and wholesalers throughout the nation.

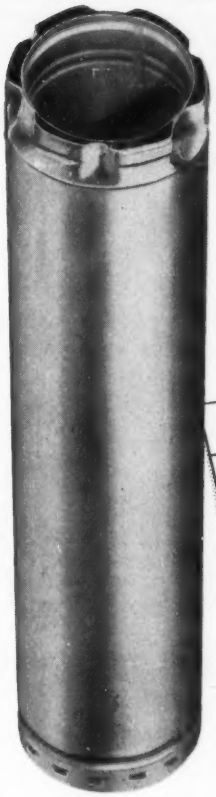
Queen Comfort will be publicized nationally to consumers as a means of sparking new interest in home heating and a greater desire for hot water and steam heating and compatible cooling systems.

After her reign, the queen will be available for personal appearances at heating promotion activities sponsored by members of the Better Heating-Cooling Council.

One of these five lovelies will be chosen Queen Comfort in a beauty contest keyed to promote hot water heating and cooling systems. Queen Comfort candidates, left to right) are: Mae Conley, Miss Sunny Warmth; Louise Riley, Miss Summer Cooling; Nan Walker, Miss Healthful Heating; Eileen Winch, Miss Economy; and Alice Heft, Miss Modern Design.



HOW TO CHOOSE A GAS VENT....

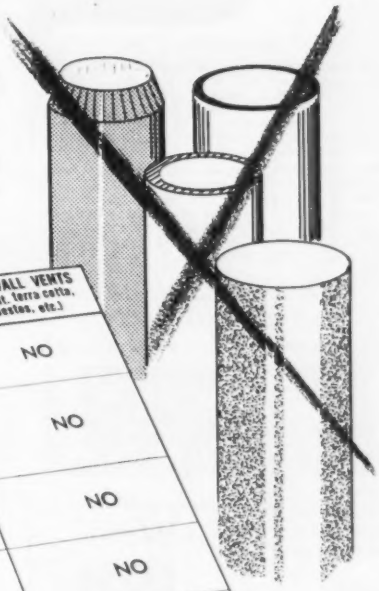


It's easy to select the proper vent for your gas-burning appliances—if you know what features to look for. Use this check-chart to help you pick the right gas vent for your installations.

AND WE KNOW YOUR CHOICE WILL BE AMERIVENT!

You'll be glad you selected AMERIVENT when you find how easily it installs and how quickly it solves *all* your gas venting problems.

Remember . . . it's the famous "pipe-within-a-pipe."



DESIRABLE GAS FLUE FEATURES	AMERIVENT	SINGLE-WALL VENTS (cement, terra cotta, asbestos, etc.)
Outer pipe stays cool, eliminates fire hazards.	YES	NO
Inner pipe heats quickly, prevents condensation and vent failure.	YES	NO
SNAP-LOCK joint speeds installation, reduces costs.	YES	NO
Light weight eliminates handling problems.	YES	NO
Resilient construction stops pipe breakage and leakage.	YES	NO
Low clearance from combustibles.	YES	NO
Resists disintegration caused by thermal shocks and stresses.	YES	NO

Ask for AMERIVENT...

at plumbing and heating wholesalers . . . everywhere.

AMERICAN METAL PRODUCTS
AMERIVENT
Double-Wall FLUE PIPE

AMERIVENT, Inc.
1080 KENTUCKY STREET
MEMPHIS 6, TENNESSEE

•

AMERICAN METAL PRODUCTS CO., Inc.
2911 COMPTON AVE.
LOS ANGELES 11, CALIF.

• YOUR BEST SEALING DEAL IS RECTORSEAL

For making leak-proof connections there's nothing to compare with Rectorseal #2. It thickens in the joint to a plastic elasticity that positively prevents leaks — holds pressures up to 11,350 psi. It is insoluble in LP-G, natural and manufactured gas, all petroleum fractions and anhydrous ammonia.

For time-and-money-saving economy there is nothing to compare with Rectorseal #2, either. Thin in the can — it's easier to use . . . spreads farther . . . lasts longer. There's no waste because homogenized Rectorseal #2 never hardens, crumbles, cracks or gets brittle. See for yourself why Rectorseal is your best sealing deal:

SEND TODAY FOR FREE SAMPLE
RECTORSEAL Dept. A
2215 Commerce St. Houston 2, Texas

RECTORSEAL # 2
MAKING THE L-P GAS INDUSTRY SAFER

KRUG PUMPS - Often Copied - Never Duplicated

WHY LOSE 4% OF B-P FUEL?

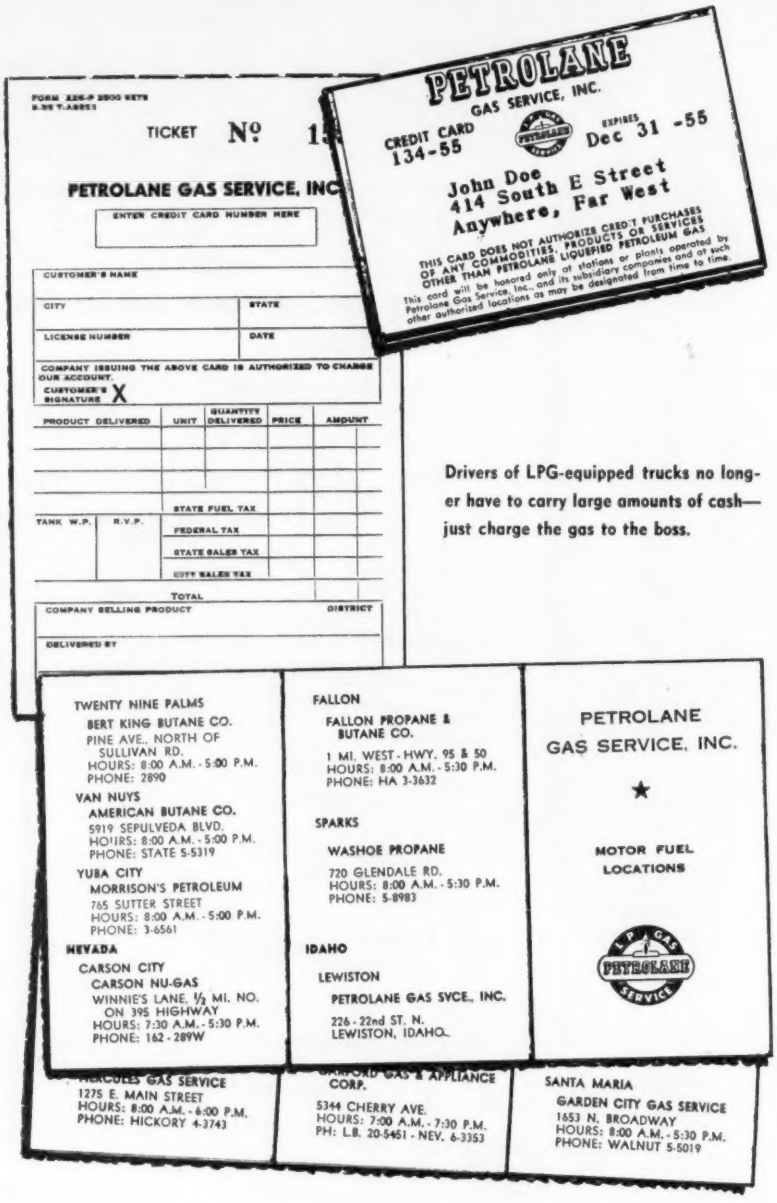
KRUG B-P PUMPS
eliminate this loss and assure SAFE transfer of liquid petroleum fuel!

Venting tanks while filling not only costs money but is also dangerous. A Krug Pump is the proven and practical method of transferring B-P Gas for tractor, bottle and tank filling. PROFIT TWO WAYS — your customers need Krug Pumps for their own protection. You can use Krug Pumps in your own operation. Ask your supply house about Krug Hand Pumps and Krug Vapor Power Pumps, or write for complete information to:

"World's Largest Producers of B-P Hand Pumps"

D. H. KRUG COMPANY
Box BP 756, MADISON, SOUTH DAKOTA

Petrolane Gas Service Inc. offers LPG credit cards



Drivers of LPG-equipped trucks no longer have to carry large amounts of cash—just charge the gas to the boss.

PARALLELING the marketing methods of the major gasoline distributors, Petrolane Gas Service Inc., Long Beach, Calif., is offering credit card service to eligible truck operators in the Pacific Coast states. These credit cards are recognized for charge purchases of L. P. gas for motor fuel at any of the company's distributing plants in California, Nevada, Oregon, Washington and Idaho.

In making a charge purchase the truck driver merely presents his credit card to the plant operator, who lists the sale on a special ticket. This is signed by the driver, and forwarded to the company's general office at Long Beach, where the accumulated tickets are consolidated into a monthly invoice to the customer. Drivers are provided with a list of motor fuel locations which gives the names, addresses and operating hours of the company branches. ■

Suburban Propane Gas Corp., Whippany, N. J.

Fuelane Corp., Liberty, N. Y.

Pure Gas Service Company, Worland, Wyo.

WHY MODERN LP-GAS COMPANIES USE *metered* SERVICE

Consumers Gas Co., Detroit Lakes, Minn.

Suburban Gas Service, Inc., Upland, Calif.

These outstanding LP-Gas Companies and many others over the nation use LP-Gas Meters *because* —

METERS provide regular "city utility" type service.

METERS build customer confidence in the service.

METERS help sell more appliances and more gas.

METERS diminish seasonal demand problems through on-customer-premise storage.

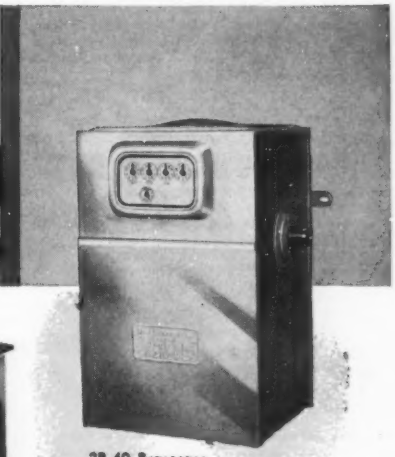
METERS simplify deliveries through regular delivery patterns without costly cross-hauling.

METERS reduce multi-service installation costs.

There is an American® LP-Gas Meter for every kind of installation — industrial, commercial, farm and home.

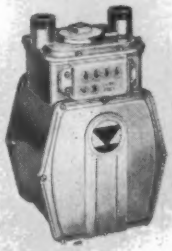
Write for full details:

W-60 Welded Steelcase



2B-40 Brasscase

2B-50 Aluminumcase



5B-225 Aluminumcase

AMERICAN® METER COMPANY
INCORPORATED ESTABLISHED 1836

AMERICAN METER CO. EST. 1836 MEASUREMENT ENGINEERS

GENERAL SALES OFFICE: 1513 Race Street, Philadelphia • Albany Alhambra • Atlanta • Baltimore • Birmingham • Boston • Chicago Dallas • Denver • Erie • Houston • Kansas City • Los Angeles • Minneapolis New York • Omaha • Pittsburgh • San Francisco • Seat ; • Tulsa IN CANADA: Canadian Meter Company, Ltd., Milton, Ontario • Calgary Edmonton • Regina

SUPPLIERS TO THE GAS INDUSTRY for Ironcase, Tinned Steelcase, Aluminumcase and Welded Steelcase Meters • American-Westcott Orifice Meters • Instruments • Reliance Regulators • Provers • Apparatus

BPN CLASSIFIED Advertising

All Classified Advertising payable with order. Copy must reach publisher's office prior to the fifth of the month preceding publication. Address: Classified Advertising Material, BUTANE-PROPANE News, 198 S. Alvarado Street, Los Angeles 57, Calif.

DISPLAY CLASSIFIED

$12.00 a column inch per issue. Choice of 18, 14, 12, 10 pt display type for headings. Set with 1 pt border. Maximum ad size 3". No cuts permitted. Publisher will set ad for maximum effect in space purchased.

UNDISPLAYED CLASSIFIED 15¢ a word Set in 7 pt type without border. $3.00 minimum charge per insertion. If Blind Box number care of B-P News is used. count as five words.

POSITION WANTED. Undisplayed rate is one half of above rate, payable in advance.

DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads.

SITUATIONS WANTED

BULK PLANT MANAGER — SIX YEARS proven experience in all phases of L. P. Gas management, best references, college education, desires connection with established firm which is beginning or expanding bulk plant operations. Will relocate. Reply Box 23, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

DESIRE POSITION AS MANAGER OF L. P. Gas Co. Twelve years experience in all phases of the L. P. Gas business. Four years experience in management. I am 34 years old, married, and have two children. Reply Box 41, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

HELP WANTED

SALESMEN—COVERING BULK PLANTS and large dealers. We have an interesting, nonconflicting, nationally advertised line that the trade is using daily. All territories open. Reply Box 14, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

EXPERIENCED GAS EQUIPMENT INSTALLATION MAN

State age, experience and give references. Steady employment, excellent working conditions.

WESTERN GAS & POWER CO.
7909 E. Sprague Ave., Spokane, Wash.

MANAGER & SALESMAN: EXPERIenced in retail propane operation. Capable of handling all phases of a retail operation. Experience in sales of propane and appliances to the retail trade essential. Straight salary or salary and commission, whichever preferable. Reply giving age, experience, education, reference, etc. in first letter. Located in Northern New Jersey. Good opportunity for qualified person. Our employees know of this ad. Reply Box 40, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

BUSINESS OPPORTUNITIES WANTED

WANTED: TO REPRESENT MANUFACturers or manufacturers' agents of LP Gas equipment and related products. Now covering five middlewestern states. Eight years LP Gas experience at retail and wholesale level. Reply Box 38, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

HOW TO FIND A BUYER

You can do it quickly, inexpensively with a classified ad in BUTANE-PROPANE News.

BUSINESS OPPORTUNITIES OFFERED

LPG BULK PLANTS. WE SPECIALIZE IN selling petroleum properties throughout Midwest. Have number desirable plants for sale. OLE BRODD, PETROLEUM MARKETERS, 605 Produce Bank Bldg., Minneapolis, Minnesota.

DISTRIBUTION WANTED FOR L. P. G. Char-Broilers, deep fat fryers—donut cookers —forced air portable heaters. The Janda Co., Box 589, Cedar Rapids, Iowa.

LP GAS BULK AND BOTTLE BUSINESS in Illinois. Gallonage 1,877,400, sales $284,267 all gas. Profit before taxes $71,253. 2,200 customers. $200,000 cash to handle terms. Federated Petroleum, Mel Putnam, 3230 University, Madison, Wis.

NO BLUE SKY TO BUY: A FAST-GROWing LP Gas business for sale, in center of irrigation district. Sold 700,000 last year. Will sell at inventory price. Other business interests reason for selling. Write Box 601, Callaway, Nebr.

FOR SALE — TRUCKS - TRAILERS

NEW 1800 WG U-69 DELIVERS MORE GAS IN LESS TIME! This Nor-Tex Twin Delivery Unit is equipped with high flow piping throughout. Mounted on your choice of truck or on your present truck chassis for only $2,194.80 (including tax). Trim skirting, ICC lights, Viking mechanical seal pump, P.T.O. spline jack shaft and 50 ft. of filler hose. Call NOR-TEX PRODUCTS COMPANY collect, C-5416, Denton, Texas.

FOR SALE: CLEAN 1948 GMC BULK truck with new 1955 Engine, 1490 water gallon capacity Twin Barrel tanks and 50 gallon per minute A. O. Smith Pump, 433 Neptune Meter. For information write Economy Bottle Gas Corp., 359 W. Lincoln Highway, New Haven, Indiana, or call E-4963 Fort Wayne, Ind. Priced right ! ! !

FOR SALE—USED DELIVERY TRUCKS. Several late model Propane Delivery trucks, 1200 to 1600 WG, piped and ready to go. EASY TERMS. White River Distributors, Inc., Phone 570, Batesville, Arkansas.

1800 WG MODEL 100, 250 LB. WP TRIMskirted tank, mounted on 1956 Chev. Model 6405 chassis, 2 speed, 9 x 22½, 10 ply rear tires, ONLY $4,081.00, Fed. Tax paid. Packaged Plumbing, meter, etc. available at regular prices. EASY TERMS, White River Distributors, Inc., Batesville, Ark.

FOR SALE: 1954 INTER. RP-162, 2-speed axle, 30,000 mi. Good rubber 8.25 tires. Viking pump, 50 ft. filler and vapor hose. 50 gal. W.C. fuel tank, 1400 gal. Nortex twin tanks. Skirting all around, owner driven since new. Excellent condition. Factory equip. Ensign carb. Only $3500.00. Write or phone Utah Colo. Gas Co., Vernal, Utah. Phone #715.

FOR SALE - TRUCKS - TRAILERS - Cont.

YOU'LL SAVE MORE TIME AND MONEY with a Nor-Tex "Package Unit." Any user will tell you, "They earn more! They cost less!" Mount this 1400 WG U-69 Twin Delivery Unit on a new truck of your choice or on a truck you now have for only $1,935.00 (Includes tax and mounting cost). It delivers more gas in less time because it's equipped with high flow piping throughout. Trim skirting, P.T.O. spline jack shaft, Viking mechanical seal pump, 50 ft. filler hose and ICC lights. Painted white enamel over red oxide. Call NOR-TEX PRODUCTS COMPANY collect, C-5416, Denton, Texas.

FOR SALE—TRUCKS, TRAILERS—FOR something different in propane tanks, see Master Tank & Welding (Dallas) advertisement in this edition.

DELIVERY UNITS: SINGLE OR Twin Barrel. Our prices are competitive. We invite comparison between the equipmen and price on our units with any competitive units. We believe we can give you the highest payloads per pound of gross vehicle weight. Write, wire, or phone, Lubbock Machine & Supply Co., Inc. Drawer 1589, Lubbock, Texas.

FOR SALE — TRACTOR - TRAILER. One Tandem Axle 5400 gallon, 1953 Model Propane Transport with R205 International gasoline and L-P Tractor 1955 Model—Low mileage, excellent condition. Immediate Delivery. Now operating. Price $11,000.00. Wytheville Bottled Gas Co., Inc., Box 450, Wytheville, Va.

NEW TRANSPORTS DELIVERY FROM STOCK

Single or Twin
6000 Gal. Twin
7126 Gal. Single
7356 Gal. Single

Maximum Payload
Write, Wire or Call

ARROW EQUIPMENT CO., INC.
Phone Whitehall 8-5581
1095 Harbor Ave.
Memphis, Tenn.

CLASSIFIED Advertising

BPN

FOR SALE - TRUCKS - TRAILERS - Cont.

FOR SALE: 5000, 5500 and 6000 gal. W.G. U69 Tandem Propane Twin Barrel Trailers. Choice of 16 with 50% 10:20 tires, air brakes. Now operating. Texas R.R. Commission, ICC, ASME approved. Delivery will be made to most northern cities for $200. Write for pictures, details. IRVIN F. NELIS ASSOCIATES, P. O. Box 14472, Houston 21, Texas.

TRANSPORTS: SINGLE OR TWIN barrel; new or used; for lease, or sale on budget or rental sale plan. If you want maximum payload, with all of the latest equipment engineered to fit your truck, roads, and your hauling problem, get the LMC PAYLOADER.
Contact Lubbock Machine & Supply Co., Inc., Drawer 1589, Lubbock, Texas.

FOR SALE — TANKS - CYLINDERS

STORAGE TANKS
Available Immediately
In the following capacities: 1000, 2000, 3000, 5000, 6000, 8000, 10,000, 15,000, 18,000 and 20,000. Your choice of 46" to 96" diameter. Write, wire or call Lubbock Machine & Supply Co., Inc., P. O. Drawer 1589, Lubbock, Texas.

FOR SALE: 21 GALLON VERTICAL U-69 200# WP Tractor tanks, complete with valves and fittings for liquid or vapor service. Ideal for hand burners, front mount tractor conversions and other farm power applications. Made by Santa Fe Eng. Co. Never used. $35 each—further discounts on quantities. Weis Butane Gas Co., Box 795, West Memphis, Ark.

SKID TANKS
— IN STOCK NOW —
3000 gallon size built especially rugged for oil field use. Write, wire or phone
Lubbock Machine & Supply Co., Inc.
P. O. Drawer 1589
Lubbock, Texas

ABOVE GROUND
PROPANE TANKS
115 to 1000 Gallons
Long Term Financing Available
FREE DELIVERY
In Our Trade Territory
Write TODAY for Prices and Details
WHITE RIVER
DISTRIBUTORS, INC.
Batesville, Arkansas
TEXAS
MANUFACTURING CO.
Gainesville, Texas

FOR SALE—TANKS, CYLINDERS - Cont.

PROPANE
TRUCK TANKS
Model 100 with Trim Skirting.
Prices INCLUDE Federal Tax
and Mounting on Chassis.
1400 WG — $1,395.00
1500 WG — $1,482.00
1800 WG — $1,676.00
2000 WG — $1,892.00
2200 WG — $2,108.00
Your choice of 5 Models, 600 to 2300 WG Twin or Single.
Packaged Plumbing, pumps, meters, etc., and all makes of trucks available.
LOW DOWN PAYMENT, up to 3 Years to Pay. Write for Descriptive Folder.
WHITE RIVER
DISTRIBUTORS, INC.
Batesville, Arkansas

FOR SALE—MISCELLANEOUS

SERVEL REFRIGERATORS
CLEAN — ALL CHECKED OK
Model M500A.....$15.00 each
Model N500A.....$18.00 each
In lots of 12 or more.
FRED A. BROWN COMPANY
100 E. Allegheny Avenue
Philadelphia 34, Penna.
Est. 1918 REgent 9-1130

FOR SALE — IMMEDIATE DELIVERY! Eureka Smokehouse Burner Assemblies! For meat smoke houses using bottled gas. Completely automatic. Clean filtered smoke. Distributes heat uniformly. Low gas consumption. Automatic temperature and pilot control. Less product shrinkage. Easily installed. Write for descriptive pamphlet. Eureka Equipment Company, P.O. Box 396, Beloit, Wisconsin.

FOR SALE: 700 USED NO. 0 SPRAGUE Meters with three dial cubic foot index, ¾" NPT inlet and outlet and 700 BL Rego 2401 Regulators with ½" NPT inlet and outlet. In service ten years. Available for immediate delivery F.O.B. Norfolk, Virginia. Quantities of 100 or entire lot. Reply Box 39, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

DECALS MADE FOR TRUCKS, EQUIPMENT. Small or large quantities. Catalog free. Mathews Co., 827 S. Harvey, Oak Park, Ill.

SERVEL GAS REFRIGERATORS

R400A	W600A
S400A	BN600A

Used: guaranteed in good operating condition. Modern, attractive, excellent condition. Low delivery cost anywhere. Send for illustrated folder NOW.

BEACH REFRIGERATOR CO.
196-11 Northern Blvd. Flushing 58, N. Y.
Phone FLushing 7-6161

FOR SALE—MISCELLANEOUS - Cont.

SPECIALS FROM
HOME GAS EQUIPMENT CO.
— Your Complete L. P. Gas Supplier —
COPPER TUBING (50 ft. coils) ⅜ x .032 per coil $6.89; ½ x .032 per coil $8.89; ⅝ x .032 per coil $10.99. We pay freight on 20 coils or more.
ALUMINUM PAINT, finest cylinder paint available, $2.25 per gal. We pay freight on 20 gallons or more.
REGO REMOTE GAUGE AUTOMATIC REGULATOR complete with pigtails. We are overstocked. WHILE THEY LAST, $10.95. TRAILER REGULATOR with POL $2.59. DOUBLE REGULATOR with tee and pigtails $4.10.
REFILLABLE HAND TORCH, ICC approved, has safety relief valve and 100% outage gauge, capacity 10 Ox. propane, burns ten full hours, complete $6.95.
L. P. TORCH, 1 lb. capacity, $8.95.
ADAPTOR POL to refill torch from any cylinder, $1.80.
We carry a complete line of L. P. equipment in all the popular makes at lowest prices. We ship order same day received. All prices FOB Cleveland, unless specified.
HOME GAS EQUIPMENT CO.
1301 Carnegie Ave., Cleveland, Ohio

WANTED — MISCELLANEOUS

WANTED—USED 60 and 100# BOTTLES. PREFER light weight. Will buy others if the price is right. Prefer carload lots. Telephone or write Pat Griffin, Fort Collins, Colorado.

WANTED: USED BULK TRUCK. 250#. 1000-2000 W.C. gallons. Write or phone BOB ROSS, INC., 2503 W. 67th St., Chicago, Illinois.

BUSINESS RECORDS

KRAFTBILT BUSINESS RECORDS increase your profits—improve your credit—help boost sales. That's why KRAFTBILT LP-Gas Forms are used by more LP-Gas dealers than any others. Simplify your office work — use KRAFTBILT Simplified forms. Approved by your Association. Highly recommended by outstanding LP-Gas suppliers. Don't wait! Send postcard now for LP-Gas Forms Catalog. ROSS-MARTIN CO., P.O. Box 800-S, TULSA 1, OKLAHOMA.

WANT TO BUY
a Bulk Plant or
BOTTLED GAS
BUSINESS?

A classified ad in BUTANE-PROPANE News will bring quick results at a minimum cost. Box 145 got 28 replies to his $11 ad — less than 40¢ a reply!

CLASSIFIED Advertising

BPN

PROFESSIONAL SERVICES

INDIVIDUALLY DESIGNED
Ammonia and LP Gas Plants

H. Emerson Thomas
& Assoc., Inc.
Westfield, N. J.

L. P. GAS
INSURANCE

Have your agent write us about our Complete and Comprehensive Coverage for Adequate Limits of Liability at Reasonable and Normal Rates with Specialized Safety Engineering and Claim Service. Available only in Alabama, Arkansas, Arizona, Georgia, Kansas, Louisiana, Mississippi, New Mexico, Oklahoma and Texas.

PAN AMERICAN FIRE & CASUALTY COMPANY
Earl W. Gammage, President
P.O. Box 1662 Houston, Texas

PROFESSIONAL SERVICES - Cont.

LP GAS INSTALLATIONS and
ANHYDROUS AMMONIA PLANTS
DESIGNED AND INSTALLED
"There's No Substitute For Experience"
PEACOCK CORPORATION
Paul E. Peacock, Jr., Pres.
Box 268, Westfield, N. J.

MISCELLANEOUS SERVICES

BUSINESS RECORD FORMS. ALL-WEATHER EZE-SNAP delivery invoices, for use when making LP gas metered truck deliveries. 1000 sets (3 part) imprinted with name, address and telephone. $17.50 per 1000 sets. DEGREE DAY SYSTEMS, WOODSIDE 77, L. I., N. Y.

CLIENTS OFTEN INCREASE PROFITS 2% or more by using my cost reducing bulk and bottle operating procedures and sales procedures. Property evaluations and special assignments also handled. Floyd F. Campbell, Management Counselor, 821 Crofton Ave., Webster Grove 19, Mo.

SELL MORE WITH DISPLAY CLASSIFIED ADS

This is an example of the attention getting type faces available in display ads in the BPN Classified Section. Cost is only $12.00 a column inch per issue, an ad this size (3") is $36.00. The large lines above are set in 18 pt. Other available sizes are shown below.

14 POINT DISPLAY
12 POINT DISPLAY
10 POINT DISPLAY

Body type is set in 7 pt like this sample. An average of 7 words to the line.

Enterprise Dealers

are the happiest dealers we know!

And why not—for Enterprise sales are up . . . up . . . up . . . ! So the dealers are making more money. Yes, year after year, Enterprise sales skyrocket upward. Dealers are happy and the customers—Enterprise customers—are the most satisfied people we know!

Enterprise
RANGES

Create Sales--Realize More Profit

Serving Value Conscious America for almost 100 years . . . .

PHILLIPS & BUTTORFF MANUFACTURING CO.
ESTABLISHED 1858 • NASHVILLE, TENN.

POWER for Agriculture Automotive and Industry

POWER SECTION

CARBURETION • INSTALLATION • SERVICING

Exclusive: a full report on Chicago's 1050 propane buses

The Chicago Transit Authority operates 1050 propane powered buses — the largest such fleet in the world. Two-hundred and fifty more are on order. Since they placed the first sample bus in service alongside several hundred diesel and gasoline buses, they have bought nothing but propane powered units. This exclusive BPN report, summarizing their 136 MILLION miles of experience, gives their reasons.

World's largest LPG bus fleet

Low cost, top performance, no fumes

In five and one-half years of operation, propane powered buses have saved the Chicago Transit Authority a total of $2,732,680 in cost of fuel and maintenance while winning the favor of the public and governmental officials through elimination of noxious exhaust fumes.

"THE Chicago Transit Authority is highly pleased with the results of its propane-fueled bus fleet operation.

"When the propane operation was proposed to CTA in 1950, numerous desirable advantages were claimed for this fuel. Now, (May 1956) our experience with propane extends across five and one-half years. As of March 31, our propane fleet of 1050 buses accumulated 136,634,000 revenue bus miles. CTA feels that the extent to which the original claims were fulfilled is supported by the record of this experience, and the record speaks for itself."

So said Walter J. McCarter, CTA's general manager, when commenting about the passing of these milestones by this, the world's largest propane-fueled bus fleet operation.

The record is impressive. In part, and in summary, it shows:

(1) Savings averaging $600 per bus, per year, entirely in fuel and maintenance since the figure excludes tire costs and depreciation.

(2) Average savings of two cents per mile, per bus, including all costs.

(3) The performance values of a high-octane fuel (100-125) permitting compression ratio of 9.5 to 1; with the fuel available, without premium price, and at a price lower than any other fuel.

(4) The complete elimination of one of the transit industry's major bus operating "headaches"—exhaust smoke and obnoxious fumes exhausted to the atmosphere and cycled into bus interiors, both of which have everywhere incurred the displeasure of the general public, the wrath of city fathers, and damnation by passengers and drivers alike, ever since buses began to roll.

(5) A safety factor under the hazards of collision that has established an excellent record.

That these values would materialize was indicated when CTA completed its propane test and launched its large scale operation. Since its initial experience with propane, CTA consistently increased the size of its propane-fueled fleet both as to the number of such buses and their percentage in relation to its total fleet. As of May 1956, the totals and percentages were:

	No. of Buses	Percent of Total
Propane-fueled	1050	41.30
Gasoline-fueled	794	31.14
Diesel-fueled	702	27.56
Total CTA fleet	2546	100.00

Moreover, if the real "proof of the pudding" is in the asking for a second helping, a chronological review of CTA's propane-fueled bus purchases is illuminating. Excluding the original test bus, the record of purchases shows:

1950—500 Twin Coach, 50 seated-passenger buses equipped with 6-cylinder, 451 cu in., 9.52 to 1 compression ratio Fageol engines rated at

BPN exclusive

200 hp at 2800 rpm were ordered.

1951—50 ACF, 44-seated passenger buses equipped with 6-cylinder, 707 cu in., 9.2 to 1 compression ratio Hall Scott engines rated at 210 hp at 2200 rpm.

1953 — 200 Flxible Twin Coach buses with the same capacity, engines, and specifications as 1950 order.

1954 — 300 Flxible Twin Coach buses with the same capacity, engines, and specifications as 1950 order.

Currently, CTA has 250 propane buses on order. Of these, 150 are Flxible Twin Coach buses identical with the 1954 order and these will be purchased outright; and 100 Mack C-49, forty-nine-seated passenger buses equipped with 6-cylinder, 510 cu in., 9.48 to 1 compression ratio Mack EN 510 A engines rated at 175 hp at 2400 rpm which will be placed under lease. Delivery of this order is expected to start on Oct. 1, 1956, and when this order is completed, CTA's propane fleet will total 1300 buses.

Prelude to propane

Early in 1950, CTA was vigorously engaged in a $150 million program aimed at modernizing all segments of its transit facilities with a substantial percentage of this sum earmarked for its bus system, the Authority was faced with the problem of selecting and purchasing a large number of new buses. A study of operating records then showed that diesel-fueled buses were more economical to operate than those fueled with gasoline. Since the savings in fuel cost per mile were substantial, CTA drafted specifications that called for diesel-fueled buses only in the then contemplated bidding procedure.

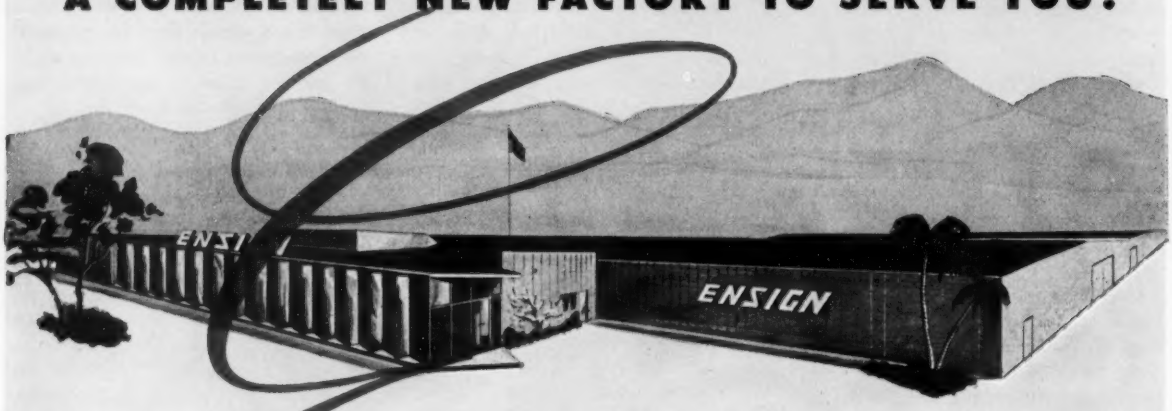
However, at about this time, several factors pointing toward serious consideration of a propane operation on a large scale appeared. Each had merit in its own right while, collectively, they gave such promise of so many benefits that CTA decided to defer final adoption of the new bus specifications until a comprehensive, all-inclusive study and operating test of propane could be made, and the results evaluated.

In considering propane, CTA was not without guideposts. A considerable history concerning the advantages of LPG as fuel for internal combustion engines already existed. Several thousand LPG-fueled trucks, in all kinds of long haul and heavy duty service, had been operating along the Pacific Coast for years, and the records of many of these operations were available. More relevant, a fleet of 135 LPG-fueled buses had been operated in Spokane, Wash., for about 10 years. During that time, the Spokane fleet accumulated an experience record totaling some 38 million miles of operation, and CTA had access to these data.

The bus fleet operating reports received from Spokane adequately supported the claims made to CTA for propane. Moreover, it was indicated that, under the more favorable conditions prevailing in 1950, even greater benefits could be expected. The Spokane bus fleet installation was hybrid; no bus equipped with an engine expressly designed for LPG was then on the market. The engines were designed for gasoline operation, and mechanically converted to use LPG. Even so, the results obtained in terms of performance, and operating and maintenance savings were prophetic, and CTA was impressed.

Newsmen and public officials turned out when the first of CTA's fleet of propane buses arrived at North Park station in January, 1951. The first purchase, made in 1950, consisted of 500 Twin Coach 50 seated-passenger buses.

A COMPLETELY NEW FACTORY TO SERVE YOU!



Ensign

A large new ultra-modern plant, complete in every detail is being erected by Ensign in Fullerton, California. From this factory will come completed units for the Western and Mid-Continent markets as well as sub-assemblies for our Chicago Assembly and Service Plant.

Building a new factory, like a new home, is an evidence of a faith and confidence in the future. For the fourth time in our history we are building an entirely new factory to meet the needs for specially designed Ensign carburetion equipment. This time our expansion is far greater — far more complete than any other, not only in plant production facilities but in research and engineering which will contribute to the continued product development expected of leaders in the automotive field.

We are exceedingly grateful to our thousands of customers who have, at times, waited weeks and months for shipments of carburetors, vaporizers, filters, etc. With this huge new Ensign production plant, which sometime this year will be "put on the line" we shall be able to alleviate shortages and to meet the demands for Ensign equipment for a long time to come. Coincident with the scheduled completion of our new factory this year we shall also mark the beginning of our 46th year in the carburetor business.

ENSIGN CARBURETOR COMPANY

FULLERTON, CALIFORNIA

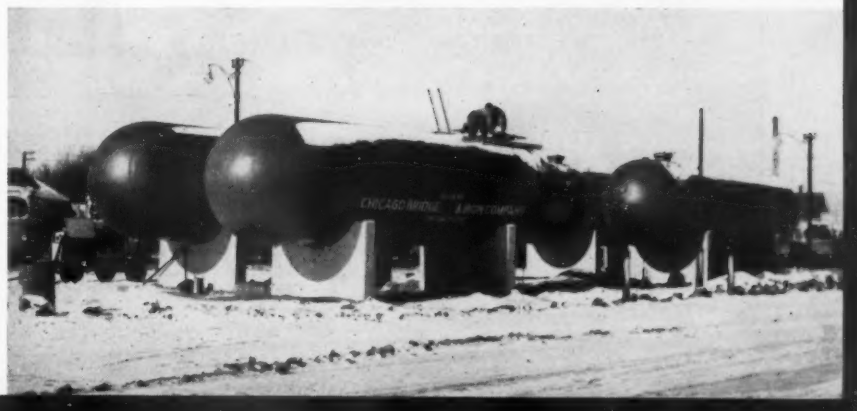
"PIONEERS IN EFFICIENT CARBURETION SINCE 1911"

World's largest

At the time when CTA was drafting its new bus specifications, a passenger bus wholly designed for propane was available. In 1949, the Twin Coach Co. was aggressively demonstrating and offering a bus equipped with a Fageol engine specifically engineered for the use of propane as fuel, and this fact did much to stimulate CTA's interest. The results achieved by the Twin Coach demonstrator not only attracted considerable attention in transit industry circles, but they gave new significance and added emphasis to those obtained in the earlier, pioneer Spokane bus fleet operation. In order to get first hand experience in its kind of operation, CTA operated a propane bus for test purposes.

Propane on trial

CTA immediately formed a team from its own personnel and called in experts from the LPG industry and representatives from the bus and engine companies to set up facilities for the test, and to supervise a large scale installation should the results of the test prove successful. The CTA team was headed by Mr. McCarter and it included Stanley D. Forsythe, general superintendent of engineering, and R. J. Ruppe, superintendent of shops and maintenance. C. L. Parkhill, of San Marino, Calif., who designed and installed the pioneer



Top — Chicago's 1050 propane buses comprise the world's largest LPG powered bus fleet and 250 more will soon be added. A portion of the fleet is shown at the North Park station.

Center — Bus fueling operations have been fast, safe and are accomplished with less difficulty than filling operations with other fuels. Mechanical union of the dispenser nozzle and the tank valve releases the attendant for other duties once the hook-up is made.

Below — Bulk storage capacity totals 225,000 gal. which are held in a total of 15 - 18,000 gal. tanks at six CTA garages. Four of the tanks are shown at the North Park station.

World's largest... Propane proved itself in a five-month test

A part of CTA's modern Forest Glen station which was put into operation in December of last year. Note the propane tanks on the left.

4 CYLINDER MANIFOLDS

JOHNSON'S

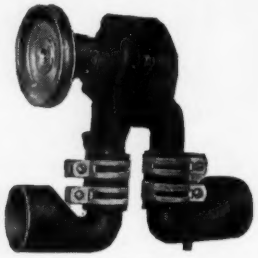
High Compression

Pistons • Manifolds • Pumps

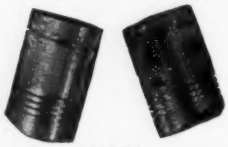
Butane Manifolds for John Deere Models "G," "A," "B," "D"
Butane Manifolds for International "H," "Super H" and 300, "M," "Super M" and 400, "W9"
Butane Manifolds for Allis Chalmers "W," "WC," "WD," "WF," "U," "UC," and "MC," Int. Truck "Red," "Blue and Black," and "Silver," Chev. GM 2-ton Truck, Ford Tractor 600 and 700 (53-55).
Water Pumps for John Deere Models "G," "A" and "B"

Johnson Machine Shop

914 E. Howard St., Pontiac, Illinois



WATER PUMPS



ALUM.
DOME-HEAD PISTONS

BUTANE MANIFOLDS

WRITE TODAY

For Price Lists and Dealer Discounts

Spokane bus fleet installation as well as many of the Pacific Coast truck operations, was called in as consultant on bus fuel tank installations and to design the bulk fuel storage, metering, and dispensing facilities. George Grist, of Phillips Petroleum Co., represented the fuel supplier. A. Brehm and Art Hilf, respectively, represented the Twin Coach and Fageol interests. A temporary 1000-gal. bulk storage tank, together with metering facilities, was set up at CTA's North Park garage, and the propane test bus was placed in revenue service on Feb. 7, 1950.

Propane proved

The test covered a period of five months. Observations made at intervals and at the conclusion of the test when the engine was completely dismantled, showed the following:

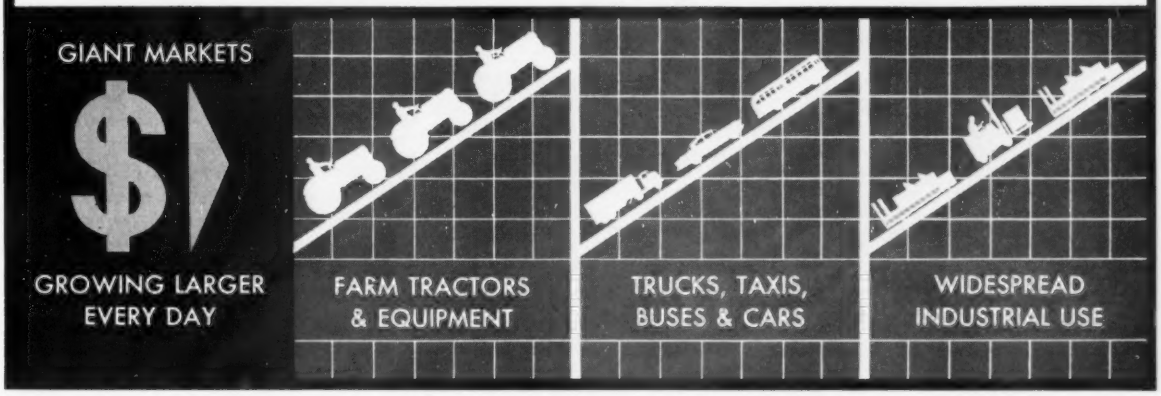
(1) Performance-wise, drivers early reported faster acceleration and more power.

(2) Inspection of the lubricating oil, at a time when it would be

ZENITH

LP-Gas systems

CARBURETORS • REGULATORS • VAPORIZERS • FILTERS



The Key to the Biggest Potential in the ever expanding LP Gas Market

The market for Zenith* LP Carburetion is one that runs into the millions of units. With the ever expanding use of LP Gas on farms, in industry and on the highways, today's sales are but an indication of the volume sales that lie ahead.

Zenith LP Gas Systems are the product of the oldest and widest-experienced carburetion manufacturer in the industry. Individual applications are factory engineered for a wide line of vehicle, industrial and farm uses.

Remember, too, every Zenith installation means an added source of fuel revenue from satisfied customers.

It will pay you to get complete detailed LP Carburetor information and data. Write our LP Gas Sales Department today.

*REG. U.S. PAT. OFF.

ZENITH CARBURETOR DIVISION
696 Hart Ave., Detroit 14, Michigan
Export Sales and Service: Bendix International Division, 205 E. 42nd St., New York 17, N.Y.

ZENITH CARBURETOR DIVISION

Bendix AVIATION CORPORATION

World's largest... The absence of offensive exhaust odors was especially important to CTA

drained from other engines, showed it to be remarkably full-bodied and exceptionally clean. This was evidence that combustion was complete and it supported the claim that propane contained no unburned "heavy ends" to wash down cylinder walls, to dilute oil in the crankcase, and to form sludge.

(3) Records kept over the test period showed fuel mileage comparable to gasoline, and the fuel cost per mile proved lower than that of diesel-fueled buses already in CTA operation.

(4) When the engine was dismantled, it was exceptionally clean. Carbon formation in the cylinder head, on pistons, and around valves was negligible.

(5) Throughout the test, the propane bus proved quieter in operation. Since the propane engine requires no supercharger, the objectionable carrying noise from this source was entirely eliminated and the noise from engine and exhaust sources was substantially less.

(6) During the test, analyses of exhaust gases proved propane to be the answer to the offensive odor problem, which scientific test was reliably confirmed by the olfactory organs of the public, the passengers and CTA's drivers.

While CTA considered all of these benefits tremendously important, the latter was especially so. Under the franchise granted CTA by the city of Chicago, CTA was obligated to take definite, positive steps to reduce, or eliminate, noxious gases resulting from its bus operations.

As a result of this test, as well as the result of studies undertaken to determine such factors as the price of propane, its availabiliity in the quantity required for CTA's operation, and the effect of propane on the Authority's insurance coverage and costs, CTA revised its new bus specifications. Under the redrawn specifications, either propane or diesel-fueled buses were acceptable and invitations to bid were sent out.

When the bids were opened, the propane-fueled buses had a lower price advantage of almost $3000 per bus. Since the adoption of the specifications accepting either propane or diesel buses on a strictly competitive bid basis, the price per propane bus has been the lower of the two, and the savings so effected have been vital to CTA's modernization and expansion program.

Propane's availability as a factor

The availability of propane was a factor of much weight in CTA's deliberations. There was no question of CTA's ability to obtain an adequate supply under normal conditions, but CTA shrewdly took a good look at the possibility of abnormal conditions, and their effect upon supply.

In 1950, the Korean situation was deteriorating, and clouds threatening a full-scale war appeared. Should war come, would propane be declared a critical material and thus be

NEWEST LP-GAS CARBURETION DEVELOPMENT
BEAM
Complete Factory Assembled
LP-GAS
CONVERSIONS
INSTALLED ✓
ADJUSTED ✓
OPERATING ✓
in less than 2 hours per unit!
Manufactured to all Requirements of
UNDERWRITERS' LABORATORIES
FACTORY MUTUAL INSURANCE
FACTORY INSURANCE ASSOCIATION
So Simple To Install!
Just bolt the brackets, connect the hoses and install the fuel tank—in less than two hours.
Assemblies come complete with Mounting Brackets pre-fit to specified fork lift trucks, hoses cut to proper lengths and clearly marked for speedy, simple installation.
BEAM Flywheel CARBURETION
The Cleanest Carburetion in the World
Eliminates health-destroying carbon monoxide "hang-over". Makes engines last 4 times longer. Cuts oil consumption 66%. No Carbon or sludge deposits. No crankcase oil dilution.
BEAM PRODUCTS MFG. CO.
Best Buy
Formerly TI-E PARKDALE CO.
BUTANE-PROPANE CARBURETION
3040 ROSSLYN ST. - LOS ANGELES 65, CALIF.
Citizens 5-5791
REGULATORS · CARBURETORS · SOLENOID VALVES

ARE CONVERSION UNITS GOOD BUSINESS FOR LPG DEALERS?

ORegon 8-2003
ORchard 7-8109

HANSEN

Hansen Gas Corporation

10600 PRAIRIE AVENUE · INGLEWOOD, CALIFORNIA

As LPG suppliers, we all are interested in new load-building opportunities.

Yet 80% of us have turned our backs on the fastest-growing and greatest new LPG market - the conversion of gasoline-engine driven equipment. Last year more than 500 million gallons of LP fuel were used by operators of such equipment.

There are at least 25 million cars which can realize big savings from LPG conversion today. There are more than 5 million trucks, busses and fleet vehicles . . . more than 2 million tractors . . . more than 200,000 fork lift trucks and other industrial vehicles waiting to be converted to LPG operating benefits . . . and the potential conversion customers on stationary engines are not yet counted!

But only 1 out of 5 of us has even approached this big new market.

For 15 years the Hansen Gas Corporation has operated an LPG conversion department. During this time we have proved that LPG conversion can be done with a minimum service facility and without specialized motor mechanics.

During this time we have perfected two simple kits which will answer all gasoline engine conversion needs . . . eliminating complex inventory problems.

Our experience has been so successful that we have expanded our conversion and fuel supply facilities in Los Angeles.

The unit with which we have been so successful is the "CYCLONE" which is manufactured, marketed and guaranteed by Equipment Manufacturing Co.

I personally invite you as a fellow LPG fuel distributor to take advantage of our experience and equipment in this profitable conversion market.

Very truly yours,

D. J. Hansen
President
Hansen Gas Corporation

FOR DETAILS ON CYCLONE CONVERSION KITS. Contact Al Bornhoft, Equipment Manufacturing Co., 16800 South Main Street, Gardena, California.

World's largest... All of CTA's buses are equipped with special safety fuel tanks

in short supply? The answer was quick in coming; propane is a surplus product, and a non-strategic material. Under the stepped up refining operations of war time, the availability of propane actually would be increased many fold.

Propane's price advantage of several cents a gallon less than other fuels was, and is, attractive to CTA. By competitive bid, the Phillips Petroleum Co. became CTA's fuel supplier under terms of a five year contract, since renewed. The fuel is supplied by Phillips through a pipeline from Texas to its East Chicago terminal, and thence to CTA's bulk storage facilities by tank truck.

Tractors perform best!
On High Octane LP-Gas with
CENTURY carburetors
3C Controlled Combustion Carburetion
with metering valve controlled combustion
...and here's why
Perfect fuel mixtures are guaranteed by Century's metering valve regardless of changing conditions, temperatures or altitudes. You get economy and performance because the metering valve controls and proportions the gas exactly as preset at the factory to the engine's performance curve. No elaborate adjustments, only a tune up is required—just set it! Seal it! And forget it!
Get the facts, write for Bulletin No. G-75
CENTURY
GAS EQUIPMENT COMPANY
Lynwood, California
A CENTURY FOR EVERY TRACTOR
Faster Starting! Perfect Idling! Economy!
UL

Fuel storage facilities

As soon as CTA contracted for its initial 500 propane buses, plans were immediately drawn for its bulk fuel storage and dispensing facilities and as the number of buses increased, additional storage capacity was added. Presently, CTA's bulk fuel storage capacity totals 225,000 gal. held at six of its garages in a total of 15-18,000 water gal. horizontal, above-ground tanks. An additional 18,000-gal. tank, now under construction at the 77th Street garage, will increase the total capacity to 240,000 gal.

As consultant, Mr. Parkhill designed the bulk storage, metering, and dispensing facilities for the first two stations, and supervised their installation. Subsequent storage, metering and dispensing stations followed the design pattern so established. A feature of the design is the installation of two five-stage multivane centrifugal pumps at each station. This permits the unloading of fuel delivery trucks to storage tanks and the simultaneous fueling of buses through standard fuel dispensers at the fueling islands with the further advantage that the dual installation automatically provides standby should one of the units fail.

All of CTA's buses are equipped with Parkhill-Wade safety fuel tanks. This unit consists of a main fuel tank which internally houses a small outage tank, the capacity of which is equal to 18 per cent of the main tank. The outage tank functions to provide for thermal expansion of the fuel due to ambient temperature. On filling, the outage tank is automatically sealed off from the main tank by a valve which automatically opens when the dispenser filling nozzle is disengaged by the attendant.

CTA finds its propane bus fueling operations fast, safe, and accomplished with less difficulty than filling operations with other fuels. No fires have occurred during fueling. Due to the mechanical union of the dispenser filling nozzle and the tank filling valve, the attendant is released for other duties during the filling.

Propane's safety record

While CTA became self-insured in 1953, it carefully checked on the influence of a propane operation upon

its insurance premiums in 1950. It found there would be no increase in insurance costs if the propane equipment and fuel handling practices complied with the requirements and safety codes set up by the National Board of Fire Underwriters, Interstate Commerce Commission, and state and city agencies. The entire installation was designed to meet all these regulations.

The CTA operation again confirms that when properly handled, as any fuel must be, propane is no more hazardous than other fuels. In fact, in several very important respects, it has proved less so.

During its 5½ year experience with propane, CTA has not suffered the complete loss of a propane-fueled bus from fire while, in the same period as the result of fires, it suffered the total loss of three buses using other fuels. What propane fires occurred happened early in CTA's experience. They were localized, minor, quickly extinguished, and little, if any, damage resulted. All were the result of a leak caused by a soldered fitting. This was corrected and there have been no fires since.

But, it has been under the hazards imposed by accidents that propane really proved up. CTA's most spectacular accident involving a propane bus occurred in the spring of 1955 when a bus was struck by a train and cut in two. The propane safety devices operated to shut off the fuel supply, the fuel tank was not ruptured, and no fire resulted.

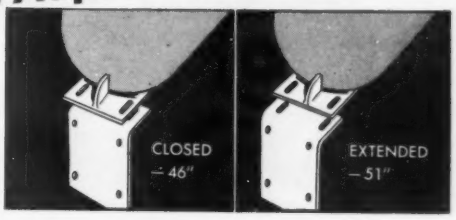
One of the most feared accidents is that in which a bus is struck in the rear, the area of its vitals, all subject to possible fire and even explosion, as the end result of the impact. CTA's record shows that no such accident involving a propane bus has resulted in either fire or explosion. In all such accidents, propane tanks have completely resisted piercing and rupture.

Propane's effect upon engine wear and maintenance

By the end of 1955, many of CTA's propane buses had reached the 200,000 mile mark. The engine of one of these was torn down for inspection, and the results were as follows:

Cylinder sleeves	.006 average wear
Pistons	.0014 average wear

With Western's **Adjusto** tank and its specially designed brackets, you



can make all pick-up installations...

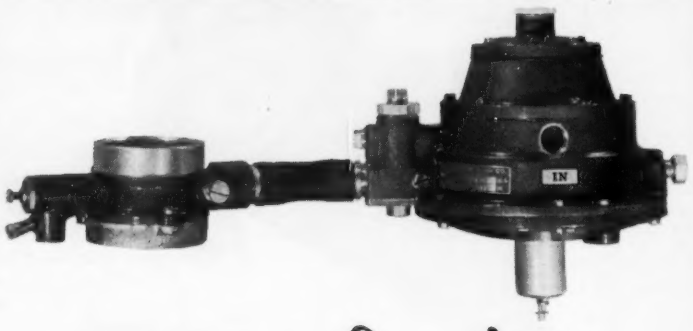
QUICKLY AND ECONOMICALLY!

Because of Adjusto's specially-designed brackets you can install it quickly and easily on ANY MAKE OR MODEL PICK-UP. Brackets are simply bolted to the sides of pickup bed, positioning tank at any desired height. The Adjusto can be easily moved from one pickup to another, without alteration of brackets. Other outstanding features include a gauge visible from driver's seat; fittings shielded by the cab; and filler valve for liquid withdrawal. Available in 37, 47, and 58 gallon capacities. For higher profits on pickup conversions, standardize with Western's Adjusto.

Arkansas Foundry Co. LITTLE ROCK, ARK.
The Binkley Company OKLAHOMA CITY, OKLA.
Brungart & Jennings BIRMINGHAM, ALA.
Gene Bumous, Inc. PLAINVIEW, TEXAS
Chickasha Gin & Mill CHICKASHA, OKLA.
Thermo-King Sales DENVER, COLO.
Fannin's Gas & Equip. PHOENIX, ARIZ.
Illinois Auto Elect. CHICAGO, ILL.
Moulden Supply Co. JACKSON, MISS.
Sleeper Equip. Co. ST. LOUIS, MO.
Southwest Gas & Equip. LIBERAL, KANSAS
Tide LPG, Inc. EDINBURG, TEXAS
AND MANY OTHERS

There's a WESTERN DISTRIBUTOR selected for Dependability and Know-How . . . Near You!

Western
TANK AND STEEL CORP.
POrter 5-9474 Box 1338 Lubbock, Texas



"Talk About Simplicity"

Any competent auto mechanic can make a DIX conversion. No special tools or parts required . . . Full instruction phamphlet available upon request.

With DIX . . . You Save on Service

DIX CARBURETOR COMPANY
6605 S. WILSON AVE. LOS ANGELES 1, CALIF.

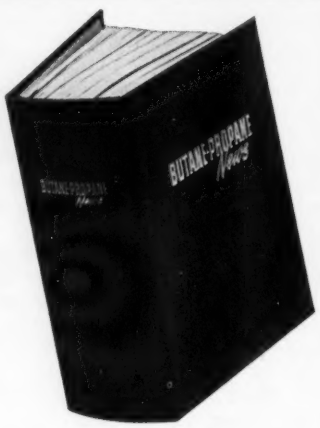
Parkhill

Safety Hose Nozzles

- *QUICKER FILLING*
- *SAFER OPERATION*

For fast, safe fuel transfer . . . at customer's storage or in the plant . . . Parkhill Nozzles are dependable. They attach in 3 seconds . . . two operations. They're safe: Nozzle must be locked on before fuel can discharge. Upon release gas escapes away from hands . . . NO COLD BURNS.

PARKHILL COMPANY
2264 Huntington Drive, San Marino, Calif.



HANDY BINDER
to preserve your copies of BUTANE-PROPANE News

This beautiful, deluxe Binder holds 12 copies, one full year of B-P News. Magazines can be inserted or taken out in a second's time, or bound for future reference. Long-lasting Du Pont Fabrikoid cover.

$2.50 PER BINDER
(Plus 4% sales tax for Calif. orders)
$3.00 outside U. S.

BUTANE-PROPANE News
198 So. Alvarado Street
Los Angeles 57, Calif.

World's largest

Crankshaft rod journals	No wear
Connecting rod bearings	.0015 average wear
Bearing clearance	.0035

A general sum up revealed:

(1) No crankshaft wear
(2) Very slight wall wear
(3) Condition of bearings: excellent
(4) Only traces of carbon on cylinder heads, pistons and around valves.

Throughout its entire propane operation, oil changes have been less frequent.

Currently, crankcase oil is drained from propane-fueled engines at 16,000 miles as against a maximum of 4,000 miles in its other fueled engines, and there is evdenice that even this mileage can be substantially exceeded. This item is producing a saving in labor and material of about one cent per bus mile.

For over four months during each of the last five winters, CTA has stored approximately 400 of its first series buses outdoors where the ambient temperature frequently stands at minus zero. The engines were idled which meant they were in operation 24 hours a day. During storage hours it was found that the propane engines could be idled at much slower speed than either gasoline or diesel engines and moreover, no contamination of the oil nor any sludging resulted as would be the case with heavier fuels.

Propane and public acceptance

As much as CTA is, itself, satisfied and highly pleased with the results of its propane-fueled bus fleet operation after 5½ years and 136,634,000 miles—and as substantial as the operating and maintenance values have been—CTA's propane operation has had to please the "boss," the riding public. And the "boss" has expressed his approval. This is best summed up by the fact that when clubs, PTA and similar groups charter a bus, the request frequently is for "one of those new propane buses." ■

POWER NEWS

Garretson offers new vapor regulator

Garretson Equipment Co. is introducing its new model KV vapor withdrawal fuel regulator, a simplified unit specially designed for applications on which tank vapor production is adequate for the needs of the engine to which it is applied. With ⅜ in. fuel outlet orifice the KV is said by the manufacturer to have capacity of up to 180 hp. The controller is also fitted with a ¾ in. outlet which raises its rating to 250-300 hp.

Other features are light weight (4 lb.) and small size (6 in. x 3⅜ in.), direct acting adjustable lock-off located on the face of the unit for easy accessibility, and a single hose to the carburetor, with no vacuum line required.

Engines that do not "break in" quickly

It has been quite commonly observed that it takes longer to "break in" a new or rebuilt propane engine than is the case with the same type of engine operating on gasoline. With LPG, the preliminary period of high oil consumption is sometimes prolonged for several thousand miles.

This condition is the normal result of the lower rate of wear on the piston rings and cylinders when using propane. The new rings and cylinder walls are somewhat rough at the start, and do not fit together perfectly, as they will after break-in is complete. When operating on gasoline the heavy ends of the fuel tend to dilute the lubricating oil, and by reducing its lubricating efficiency, speed up the process of wearing the high spots and points off the friction surfaces.

Recent developments in engine oil, particularly in the "heavy duty" oils, have improved its lubricating quality, thus reducing the rate of wear in the engine. With these improved oil the engine life is improved—and if such lubricants are used during the break-in period the process requires considerably more miles. In breaking in any engine, it is advantageous to use a less heavily treated oil for at least the first few hundred miles. With a propane engine, in which the rate of wear is noticeably less than with gasoline, it might require as much as 20,000 miles to complete the break-in with the highly compounded heavy duty oils. In order to insure quick break-in it is advisable to start the process with a straight mineral oil (no compounding) or a special break-in oil. These are available from most of the leading oil companies. The use of such an oil should be continued until the oil consumption drops to normal, after which the desired grade and type of compounded oil may be used.

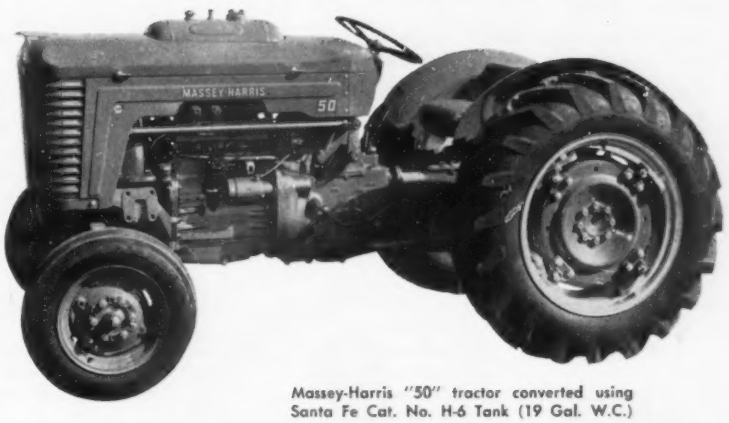
It should also be remembered that oil has a slight tendency to thicken with prolonged use in a propane engine. To offset the thickening in the propane engine, many operators follow the practice of using one grade lighter oil for makeup than is used for the complete fill following drainage of the crankcase.

1955 industrial trucks

According to the U. S. Census Bureau there were 26,843 fork lifts and industrial trucks manufactured in 1955. Of these about 80% were equipped with gasoline or L. P. gas engines.

In LP-Gas Motor Fuel Tanks . . .

Santa Fe LEADS THE WAY



Massey-Harris "50" tractor converted using Santa Fe Cat. No. H-6 Tank (19 Gal. W.C.)

This new H-6 tank is one good example of why Santa Fe continually leads the way in conversion tanks. "Custom-Built" for the Massey-Harris "50", it has all the outstanding features that LP-Gas dealers and their customers have come to expect in every Santa Fe tank.

The extremely low position of the tank presents the last word in streamlined appearance . . . and makes it simple and easy to raise the top hood section. All valves are conveniently located for fast refueling and ready visibility. And the complete kit supplied with the H-6 tank assures you a time-saving, profitable installation tailored to give complete customer satisfaction.

There are scores of other reasons for Santa Fe's leadership in LP-Gas tanks for tractors . . . one, in fact, for every make and model of farm tractor. Popular model tanks are available for immediate shipment. Write or wire today for prices and complete specifications.

Santa Fe ENGINEERING & EQUIPMENT CO.

P. O. Box 587 • Phone Diamond 3-8169 • Tulsa 1, Okla.

THE NEW MANCHESTER SUPER "8" ANGLE-FLAME BURNER

1. The SE No. 287 Super "8" L.P. Gas vapor hand burner is extremely lightweight (5¼ lbs. – the lightest part of the burner is at the very end where most burners are the heaviest). It is easy to use.
2. The Super "8" is eight feet long – this gets the heat away from the operator. Farmers are using the Super "8" extensively in 100 degree weather.
3. The added length of the Super "8" permits the operator to reach across most irrigation ditches with ease.
4. The new angle flame permits complete coverage of the entire ditch. Simply a twist of the wrist directs the highly effective L.P. Gas flame where it will do the most good.
5. The windproof pilot is very easy to light and is made of new heat resistant metal.
6. The original Manchester trigger valve permits use of flame only when needed, which assures added economy and working comfort when using the Super "8".
7. The 250 Gallon net L.P. Gas tank built to 250 lbs. API or 200 U-69 Code, complete with UL listed valves, supplies ample fuel for the Super "8" burner and enables you to cut delivery cost.
8. The six foot, 270 degree swing boom is located on top of tank and keeps L.P. Gas hose off ground and away from wheels for maximum safety.

You can profitably use the film "Potentials in L.P. Gas Weed Burning" to help you promote sales and increase your summer load. Write for particulars.

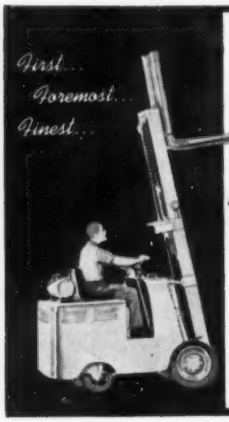
You can also choose from the complete line of Manchester LPG conversion tanks; there is a Manchester tank to fit every standard model tractor or truck. L.P. Gas fuel tanks are available for all the latest tractor models.

For further information write to

MANCHESTER Welding & Fabricating Co.

NEwmark 1-9357 or NEvada 6-2839

2880 NORTON AVENUE, LYNWOOD, CALIFORNIA



WHEREVER DEPENDABLE CONTROL IS REQUIRED ALWAYS SPECIFY

REGO® LP GAS EQUIPMENT

For lift trucks and all other types of combustion engine installations, be sure of getting the finest LP Gas control equipment. Always specify REGO . . . the best in the industry as well as the most complete line.

WRITE TODAY for complete REGO Catalog Free!

THE BASTIAN-BLESSING COMPANY
4205 West Peterson Ave. • Chicago 3, Ill.

REGO is a registered trade mark of The Bastian-Blessing Company

See our general ad on pages 48 and 49

BPN field report

Railroad cabooses are going modern

Modern cabooses have bay windows instead of cupolas, electric instead of kerosene lights, gas instead of wood stoves.

MANY an L. P. gas dealer can remember when, as a boy, he longed to take a trip in the little red car that bounced and swayed at the end of each freight train that passed through his town. Those who were successful in obtaining that privilege soon discovered, however, that the caboose was not nearly as glamorous or as inviting as had been supposed. Once inside, one quickly found out why railroaders always referred to it as "the crummy."

Thanks to electricity, supplied by generators powered by propane gas,

The freight conductor has a comfortable well lighted desk.

railroad cabooses are going modern. The dingy and flickering oil lamps and lanterns are giving way to bulbs that illuminate the interior as brilliantly as the parlor cars on crack passenger trains. The old pot bellied stove that smoked and furnished either too much or not enough heat is giving way to modern gas heaters that keep the temperature just right regardless of the weather.

The engine-generator system operates from propane cylinders just like the air conditioning systems on passenger trains.

New cabooses

A few months ago when the Chicago & Northwestern Railroad decided to modernize its cabooses, it already knew that propane gas was the most effective and the most economical way of providing electricity. Propane had powered the air conditioners on the C & NW passenger trains for years. Therefore, when it drew up plans for 37 new, all steel cabooses, it specified a 750-watt generator for each car, to be powered by two 100-lb gas cylinders, housed in a steel cabinet under the floor. The new cabooses proved so efficient and so popular with freight train crews that the company placed an order for 25 more.

The engine-generator sets are supplied by the D. W. Onan & Sons Co., Minneapolis. The Chicago & Northwestern maintains its own propane testing and storage plant in Chicago and the caboose cylinders are refilled and tested there at regular intervals, along with the many cylinders used with the air conditioning engines.

More expansion

Other railroads are said to be planning extensive caboose modernization programs, and propane gas for electric current may be expected to gain wide usage in view of the satisfactory service it is rendering on the Northwestern.

Since the caboose is the office of the freight train conductor and headquarters for other members of the train crew, railroaders agree that one that is well lighted and comfortably heated increases efficiency. Longer and faster freight trains of today have given the conductor more paper work to handle in less time than ever before. Better lighting and heating are speeding up that work and helping to eliminate costly, time consuming mistakes, not always avoidable when done under the rays of a flickering lamp, according to Northwestern operating executives. ■

WE WANT YOUR FILTER BUSINESS

The J&S "ACORN" FILTER
WAS $6.50 LIST
NOW $4.50 LIST

ACTUAL SIZE

- **BEST BUY** anywhere in cleanable LPG carburetion filters.
- **MICRONITE FILTER** element replaceable at small cost. Resistant to oil, gas, sulphur, water, heat.
- **SMALL, COMPACT, LIGHT WEIGHT,** easily mounted in the copper tubing or with pipe nipple at vaporizer inlet. Base has tapped holes for 5/16" mounting bolts. Inlet and outlet are ¼" FIPT.
- **UNDERWRITERS' LABORATORIES TESTED** for your protection, and to meet insurance requirements.
- **NEW DESIGN** for mass production enables us to reduce price from $6.50 to $4.50, list. Our present supply of aluminum-base filters will be sold at the new price.

J.&S. CARBURETOR COMPANY
P.O. BOX 10391 DALLAS, TEXAS
"TWENTY YEARS IN GAS CARBURETION"

Advertisers

***These advertisers carry additional information on their products in the 1956 Butane-Propane Catalog.**

Ace Hose Reel Co. 124
*ACF Industries, Inc. 123
Adams Bros. Mfg. Co., Inc. —
Agricultural Equip. Co. 88
Amco Corp., The — Ardmore Products —
*American Liquid Gas Corp. —
American Metal Products Co. 129
*American Meter Co., Inc. 131
Reliance Regulator Div. —
American Pipe & Steel Corp. —
American-Standard Air Conditioning Div. —
American Tank & Mfg. Co. 60
Anchor Coupling Co. —
*Anchor Petroleum Co. Third Cover
*Anco Mfg. & Supply Co. —
Anderson & Forrester —
Anthony Co. —
A-P Controls Corp. —
Ardmore Products — The Amco Corp. —
Armco Drainage & Metal Prod., Inc. 105
Armstrong Products Corp. —
Assembly Products, Inc. —

Bagwell-General Steel Co. —
*Bastian-Blessing Co., The 48, 49, 148
*Beacon Petroleum Co. —
*Beaird Co., Inc., The J. B. 65,66
*Beam Products Mfg. Co. 142
*Bendix Aviation Corp., Zenith Carburetor Div. 141
*Birmingham Stove & Range Co. 124
*Black, Sivalls & Bryson, Inc. —
Blue Co., John —
Bowser, Inc. —
Brown Stove Works —
Broyhill Mfg. Co. —
*Brunner Mfg. Co. —
Bryant Division, Carrier Corp. 117, 118
Buckeye Incubator Co. —
Buehler Tank & Welding Co. —
Burnham Corporation, The —
Butler Mfg. Co. 10

*Calor Gas Company —
Caloric Appliance Corp. —
Carter Oil Co., The 74
*Century Gas Equipment Co. 144
Champion Bronze Powder & Paint Co. —
*Charlotte Tank Corp. 99
Chevrolet Motor Div., General Motors Co. 68
Chiksan Company —
Cities Service Co. 125
Coleman Co., Inc. 73
*Columbian Steel Tank Co. 119
Corken's, Inc. —
Crane Co., The —
Crane Packing Co. —
Cribben & Sexton Co. —
Crouse-Hinds Co. —

Dallas Tank Co., Inc. 103
Dal-Worth Tank Co. 62
Davis Engineering Corp. —
Day & Night Div., Carrier Corp. —
Dearborn Stove Co. 91
Deere, John —
*Delta Tank Mfg. Co. 54
Dix Carburetor Co. 146
*Dixie Products, Inc. —
Dixon Valve & Coupling Co. 104
*Downingtown Iron Works, Inc. Div. of Pressed Steel Tank Co. —
Drake & Townsend, Inc. 126

Eisele & King, Libaire, Stout & Co. —
Electro Products Co. —
Ellis Manifold Co. —
Empire Oil & Refinery Co. —
Empire Stove Co. 22
*Ensign Carburetor Co. 138
Equipment Mfg. Co., Inc. 143
Eureka-Williams Corp. 75
Ever-Tite Coupling Co., Inc. —

Fairbanks, Morse & Co. —
First Acceptance Corp. 110
*Fisher Governor Co. 127
*Flint Steel Corp. 1
Ford Motor Co. 67

Garretson Equipment Co., Inc. —
Gas Appliance Mfrs. Assn., Inc. —
Gas Machinery Co. —
Gates Rubber Co. —
General Controls Co. —
General Electric Co., Electronics Div. —
*General Gas Light Co. 25
Griffiths, E. F. Co., The 95
Grinnell Co., Inc. —
Gulf Oil Corp. 15

Hannay & Son, Inc., Clifford B. —
Hansen Gas Corp. 143
*Hardwick Stove Co. —
Harper-Wyman Co. —
Harrison Steel Cabinet Co. —
Hartzell Propeller Fan Co. —
Herbster Furnace Co. —
*Hewitt-Robins, Inc. —
Holly Mfg. Co. —
Holsclaw Bros., Inc. —
*Hones, Chas. A., Inc. —
Hunt Heater Corp. 98

Illinois Iron & Bolt Co. 107
Imperial Brass Mfg. Co. —
Industrial Mfg. Co. of Texas, Inc. 96
International Harvester Co. —

J & S Carburetor Co. 149
Janitrol Heating & Air Cond. Div., Surface Combustion Corp. —
*Johnson Gas Appliance Co. —
Johnson Machine Shop 140

Kaiser Steel Co. —
Krug, D. H. Co. 130

Lee & Son, Wm. W. —
*Linde Air Products, Div. of Union Carbide & Carbon Corp. 113
Locke Stove Co. —
*LPG Credit Corporation —
LPG Leasing Corp. —
Lubbock Machine & Supply Co. 111
Lux Clock Mfg. Co. —

Madden Brass Products Co. —
Magic Chef, Inc. —
Manchester Welding & Fabricating Co. 148
Martin Stamping & Stove Co. 126
*Master Tank & Welding Co. 121
McCabe-Powers Auto Body Co. —
*McNamar Boiler & Tank Co. —
Mettler Mfg. Div., Eclipse Fuel & Engineering Co. —
Milwaukee Gas Specialty Co. —
Minneapolis-Honeywell Regulator Co. 93
Mission Appliance Corp. —
Mississippi Tank Co. —
*Mitchell Co., John E. 70
Modine Mfg. Co. —
Moellenbrock & Wilke —
*Motorola, Inc. 97
*Mutual Liquid Gas Equipment Co., Inc. 90

Nelson, Edward S. Ltd. 122
*Neptune Meter Co. —
Nicson Engineering Co. —
Norman Products Co. —
*North Texas Tank Co. 6, 7
Northwest Fabricators 122

Ohio Brass Co. 114
Ohio Foundry & Mfg. Co. —
Ohio Injector Co., The —
Okadee Company —

Parkhill Co. 146
*Pasley Mfg. & Dist. Co., The 106
Peerless Mfg. Corp. —
*Penn Brass & Copper Co. —
*Perfection Industries, Div. of Hupp Corp. 4, 5
Phillips & Buttorff Mfg. Co. 134
*Phillips Petroleum Co. —
*Pittsburgh Equitable Meter Div., Rockwell Mfg. Co. 77
Powell Co., The William 109
Power Manifold Co. —
*Pressed Steel Tank Co. Second Cover
Prewav, Inc. —
Pure Oil Co., The 24

Quaker Mfg. Co., Div. of Florence Stove Co. —

Radio Corp. of America —
Ransome Corp. of America —
Rector Well Equipment Co. 130
Remington Rand, Div. of Sperry Rand Corp. —
Reo Motors, Inc. —
*Republic Heater, Div. Odin Stove Co. —
Reznor Mfg. Co. 92
Rheem Mfg. Co. —
Richardson Gasoline Co., Sid 50
Ridge Tool Co., The —
Robertshaw-Fulton Controls Co., Grayson Controls Div. 12, 13
Robertshaw Thermostat Div. —
*Rockwell Mfg. Co., Pittsburgh Equitable Meter Div. 77
Rockwood Sprinkler Co., Ball Valve Div. —
Union Division —
Roney, Inc. 100
*Roper Corp., George D., Pump Division —
Range Division —
Ruud Manufacturing Co. 89

Santa Fe Engineering & Equipment Co. 147
*Scaife Co. 89
*Selwyn-Pacific Co. 94, 95
Service Petroleum Co. —
Sheffield Bronze Paint Corp. —
Shell Oil Company —
Siegler Corp. —
Sinclair Chemicals Inc. —
*Sinclair Oil & Gas Co. 101
Skelly Oil Co. —
Skinner Co., M. B. —
Smith Corp., A. O., Permaglas Div. —
*Smith Precision Products Co. —
*Sprague Meter Co. Fourth Cover
*Squibb-Taylor, Inc. 102
Stampings, Inc. 59
Standard Meter Repair Co. —
Star Manufacturing Co. —
Steel Cooperage Div., Serrick Corp. 86
Stewart-Warner Corp. 115
Stratoflex, Inc. —
Superior Industries, Inc. 112
Superior Tank Corp. 108
*Superior Valve & Fittings Co. —

*Tappan Stove Co., The —
*Temco, Inc. 18, 19
Texas Boiler and Machy Co. —
Texas Company, The —
*Texas Natural Gasoline Corp. 26
Texoil Equipment, Inc. —
*Trinity Steel Co., Inc. 16, 17
*True Blue Oil Co. —
*Tuloma Gas Products Co. 20

*Union Carbide & Carbon Corp., Linde Air Products Co. Div. 113
Union Petroleum Corp. —
*United Petroleum Gas Co. —
United States Rubber Co. —
Utility Appliance Corp. 52

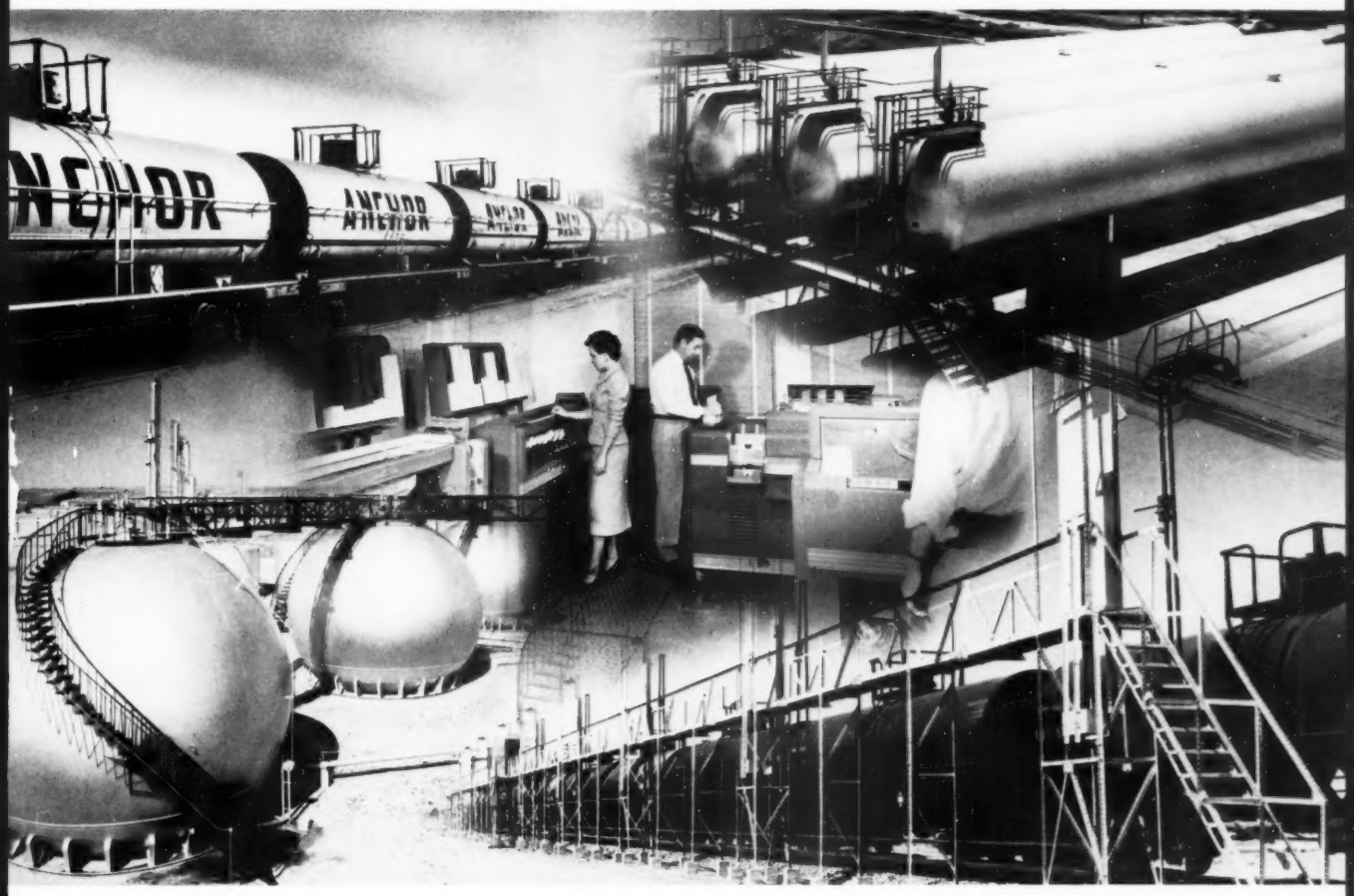
*Viking Pump Co. 120

Waldorf Heater Co. —
*Wallace, William, Co. Metalbestos Div. 76
Warner Brooder Corp. —
*Warren Petroleum Corp. Front Cover
*Weatherhead Co., The 56
*Welbilt Stove Co. —
Weldit, Inc. 128
Western Tank & Steel Corp. 145
Whitehead Mfg. Corp., D. W. —
White Products Corp. —
*White River Distributors, Inc. 128
Wilson, Andrew, Co. —
*Wood, A. R., Mfg. Co. —
Wood Co., John Heater & Tank Div. 115
Woodside Industries —

*Zenith Carburetor Div., Bendix Aviation Corp. 141

• all of this for just one reason...

L.P.G. TO YOU P.D.Q.



...and ANCHOR is growing to *HELP YOU GROW!*

All these nation wide facilities have no other reason than to see that you get good gas with the dependability that your own customers expect from you.

Anticipating that next year your needs will be greater than ever before, Anchor is expanding every facility. You can grow in pace with the industry if you contract with a completely dependable supplier. And that could be Anchor if you'll call Tulsa, CHerry 2-7261.

ANCHOR

PETROLEUM COMPANY • TULSA

SALES OFFICES: Des Moines, Shreveport, Toledo, Houston, Long Beach, Oklahoma City, Midland, Texas, San Francisco, Seattle, Salt Lake City, East Patterson, N. J., Hattiesburg, Miss., Tyler, Texas, Calgary, Canada.

FOR L.P. GAS MULTIPLE METER SETS...

Where several consumers are supplied from one storage point, gas regulation and metering are necessary. The Sprague Combination Meter and Regulator takes care of both functions — and all in *one* compact unit.

When installed with Sprague Meter Loops, only half the space of conventional meter and regulator sets is needed and real savings are possible, as just five items, and requiring only four pipe threads, are necessary in this economical, efficient, double-purpose unit.

THE Sprague METER COMPANY • BRIDGEPORT 4, CONN.

DAVENPORT, IOWA • HOUSTON 3, TEXAS • LOS ANGELES 23, CALIF. • SAN FRANCISCO 11, CALIF.